ECONOMICS
Paper 4
Model Essays
(With Elaborated Mark Schemes)

Article No. 154

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PREFACE

In addition to basic knowledge and comprehension, Cambridge International (CI) essay questions test a variety of higher order skills like application, analysis and evaluation. What motivated me to write this book was the fear of thousands of A Level Economics students to meet this challenging task. This book makes an effective learning tool for the application of existing knowledge to novel and unfamiliar situations, critical analysis involving logic and reasoning, evaluation of given policies and incorporation of one's own judgment into a comprehensive, well-structured essay.

The broader aim, however, is to provide a sense of achievement to students and develop their self-confidence as they learn to tackle essay questions effectively. Memorizing the contents of this book and reproducing them as such will have no more than a marginal impact on their skill to produce a well-informed essay. We hope our readers bear in mind that investing time and effort in developing essay writing skills today will benefit them endlessly throughout their life.

I strongly recommend students to attempt examination questions on their own before consulting the answers provided in this book. They must consult other textbooks, incorporate necessary changes and build what they think is a perfect answer before comparing it with the one this book provides. I particularly chose to write fully structured essays in place of brief, bulleted answers as the latter kill the entire spirit of a coherent essay.

I hope my readers will be satisfied with the content this book has to offer them. At the same time, I look forward to their criticism and suggestions. Students may also find my other two books, *Understanding Economics AS Level and Understanding Economics A2 Level*, useful in meeting the study requirements of the CI Advanced Level Economics syllabus.

Thank you.

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Contents

PREFACE		**3**
Unit-1	**Utility**	**6**
Unit-2	**Cost Curves, Size of Firms**	**22**
Unit-3	**Market Structures**	**32**
Unit-4	**Economic Efficiency**	**50**
Unit-5	**Factor Market**	**62**
Unit-6	**Per Capita Income, Living Standards, Developing Economies**	**70**
Unit-7	**Equilibrium Income, Keynesian Multiplier**	**80**
Unit-8	**Economics ploicies, unemployment & Inflation**	**96**
Data Response		**102**

UNIT 1

Utility

A Level
Economics
Topical Paper 4

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Syllabus 2019 –21

MJ12/42/Q2a
MJ12/42/Q2b
ON07/04/Q2a
MJ12/41&43/Q2b
ON12/42/Q2a
ON12/P41/Q2b
ON06/P04/Q3a
ON14/P41/Q2a
MJ16/P43/Q2a
MJ16/P43/Q2b
ON16/P41/Q3a
ON16/P41/Q3b

UNIT-1 UTILITY

1. (J12/42/2a)

When buying goods not everyone buys the same standard product. There are some who want a cheap product even though it might be of poor quality, while there are those who are willing to pay more for a luxury or an individually-made product. Customers search for value but value is not just in the price.

(adapted from New York Times in the Observer 21.02.10)

(a) Explain the theoretical link between utility, price and the demand for a product. [12]

Definition of marginal utility, clearly differentiating it from total utility (1 mark). Explanation of the Law of Diminishing Marginal Utility (1 mark). As additional units give lesser and lesser satisfaction/MU, consumers are willing to buy more only if the price is lowered, resulting in a downward sloping demand curve (1 mark).

Consumers allocate resources/expenditures among different products to maximize total utility (1 mark).

Total utility is maximized when the marginal utility per dollar from last units of all commodities are equal (1 mark). Condition of consumer's equilibrium shown with the help of an equation i.e. (1 mark). Consumers should allocate more expenditures to products whose marginal utility per dollar is more (1 mark). Decrease* in the price of a product increases marginal utility per dollar (1 mark) leading to a situation of disequilibrium (1 mark). To restore consumer's equilibrium, consumers will demand more of this product (1 mark). Reallocation of expenditures from the expensive product to the cheaper one (whose price has fallen) increases total utility (1 mark) as the gain in utility by consuming more units of cheaper good outweighs the utility lost by consuming fewer units of the expensive product (1 mark). Demand curve thus slopes downward as more units are demanded at lower prices (1 mark). A correctly labeled downward sloping demand curve (1 mark).

*Note: Answers discussing increase in price may also be rewarded.

2. (J12/42/2b)

(b) Discuss whether the economic analysis of a rational consumer estimating demand based on value (utility) is valid not only for standard products but also for poor quality and luxury products. [13]

Analysis that the economic analysis of a rational consumer is valid or invalid (up to 9 marks)

Analysis that the economic analysis of a rational consumer is valid (up to 6 marks)

A rational consumer is one who seeks to maximize total utility (1 mark). A rational consumer purchases only those items whose MU exceeds sale price, giving him a positive consumer surplus (1 mark). Relatively poor people hesitate to buy luxury goods as they are perceived to be less important and of less value i.e. lower MU, and their purchase would result in negative consumer surplus (up to 2 marks). Luxury goods are sought after goods by rich people, who buy them even at higher prices as these goods are perceived to be of higher value/MU, and MU exceeds the price, giving consumers a positive consumer surplus (up to 2 marks).

Analysis that the economic analysis of a rational consumer is invalid (up to 6 marks)

Quality is a subjective term and different consumers associate different meanings to it, so a low quality good may well be a luxury item for another consumer (up to 2 marks). In real life, consumers may not be rational as their choices are influenced by advertising and attractive packaging (up to 2 marks). Consumers may purchase goods on impulse instead of on some rational basis contradicting the economic theory (up to 2 marks).

Evaluation of the economic analysis of demand theory (up to 4 marks)

The economic theory is based on Marginal Utility and it is difficult to ascertain an accurate MU (1 mark). Consumers do not have perfect information (1 mark) and tend to make irrational choices (1 mark). The theory assumes that consumers compare the price and MU of every single unit before buying, but in reality, they buy goods in a higher quantity and do not make choices that precisely (up to 2 marks).

3. No Reference

(a) Explain consumer's equilibrium with the help of indifference curves. [10]

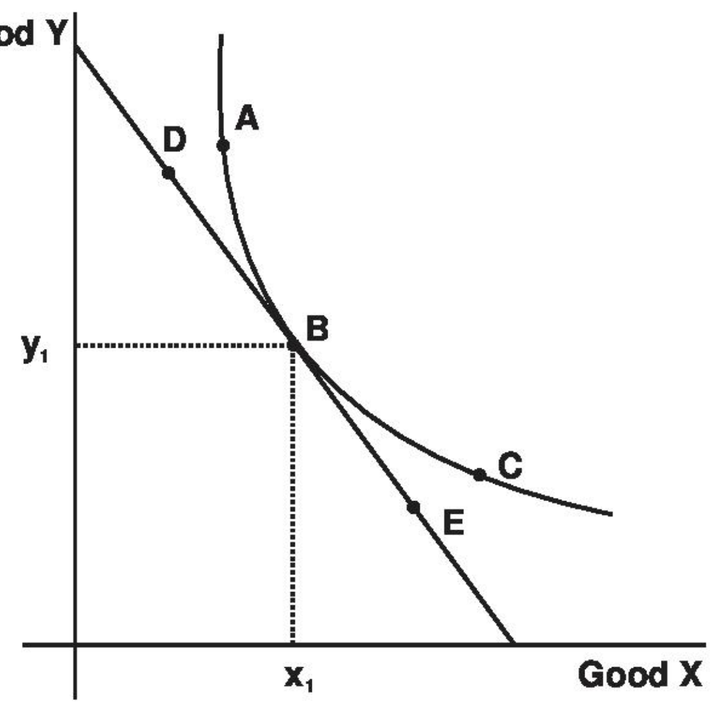
Definition of Budget Line i.e. it shows combinations of X and Y a consumer can purchase with given income and prices (1 mark)

Definition of Indifference Curve i.e. it shows combinations of X and Y that provide the same utility and the consumer is indifferent among these combinations (1 mark)

Identification that the consumer attains equilibrium when the consumer maximizes total utility at a given income and given prices of goods (1 mark)

Diagrams of Indifference Curve and Budget Line with proper labeling (1 mark)

Graphical Identification of Tangency of Indifference Curve & Budget Line (1 mark)`



Combinations A, B & C provide the same utility to the consumer as they are on the same indifference curve, however, combinations A & C cost more than combination B. Combinations E & D, though cost the same as combination B (as all three are on the same budget line), B gives higher utility than combinations E & D, as B is on a higher indifference curve. Thus, consumer equilibrium is at point B where the total utility for consumers is maximized. (up to 2 marks)

1 mark for identifying that the slope of Indifference Curve is MUx/MUy (1 mark)

1 mark for identifying that the slope of Budget Line is Px/Py (1 mark)

Identification that total utility is maximum where MUx/MUy equals Px/Py (1 mark) and this is where Indifference Curve & Budget Line are tangent i.e. their slopes are the same (1 mark)

4. No Reference

(b) Explain the difference between normal and inferior goods with the help of indifference urves. [10]

Show consumer's equilibrium graphically i.e. the tangency of Indifference Curve and Budget Line (1 mark)

Budget Line shifts towards right when income increases (1 mark)

Identify that once income increases consumers will choose a combination at a higher Indifference Curve (1 mark)

Show new equilibrium (1 mark)

Connect old and new equilibrium points with a straight line and identify it as an income consumption curve (ICC) (1 mark)

Using the diagram show that increased income reduces demand for x (if x is inferior) and increases demand for x if x is normal (1 mark)

Prove with graph that x and y can both be normal at the same time (1 mark) but they both can't be inferior at the same time (1 mark)

Note: Accept if the candidate mentions decrease in income.

5. (N07/04/2a)

(a) Explain how, according to utility theory, consumers allocate their expenditure between different products as prices change. [12]

Definition of marginal utility, clearly differentiating it from total utility (1 mark). Explanation of the Law of Diminishing Marginal Utility (1 mark). Consumers allocate resources/expenditures among different products to maximize total utility (1 mark).

Total utility is maximized when the marginal utility per dollar from last units of all commodities are equal (1 mark). Condition of consumer's equilibrium shown with the help of an equation i.e. $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$ (1 mark). Consumers should allocate more expenditures to products whose marginal utility per dollar is more (1 mark). Decrease* in the price of a product increases marginal utility per dollar (1 mark) leading to a situation of disequilibrium (1 mark). To restore consumer's equilibrium, consumers should allocate more expenditures to this product (1 mark). Reallocation of expenditures from the expensive product to the cheaper one (whose price has fallen) increases total utility (1 mark) as the gain in utility by consuming more units of cheaper good outweighs the utility lost by consuming fewer units of the expensive product (1 mark). Increased consumption of

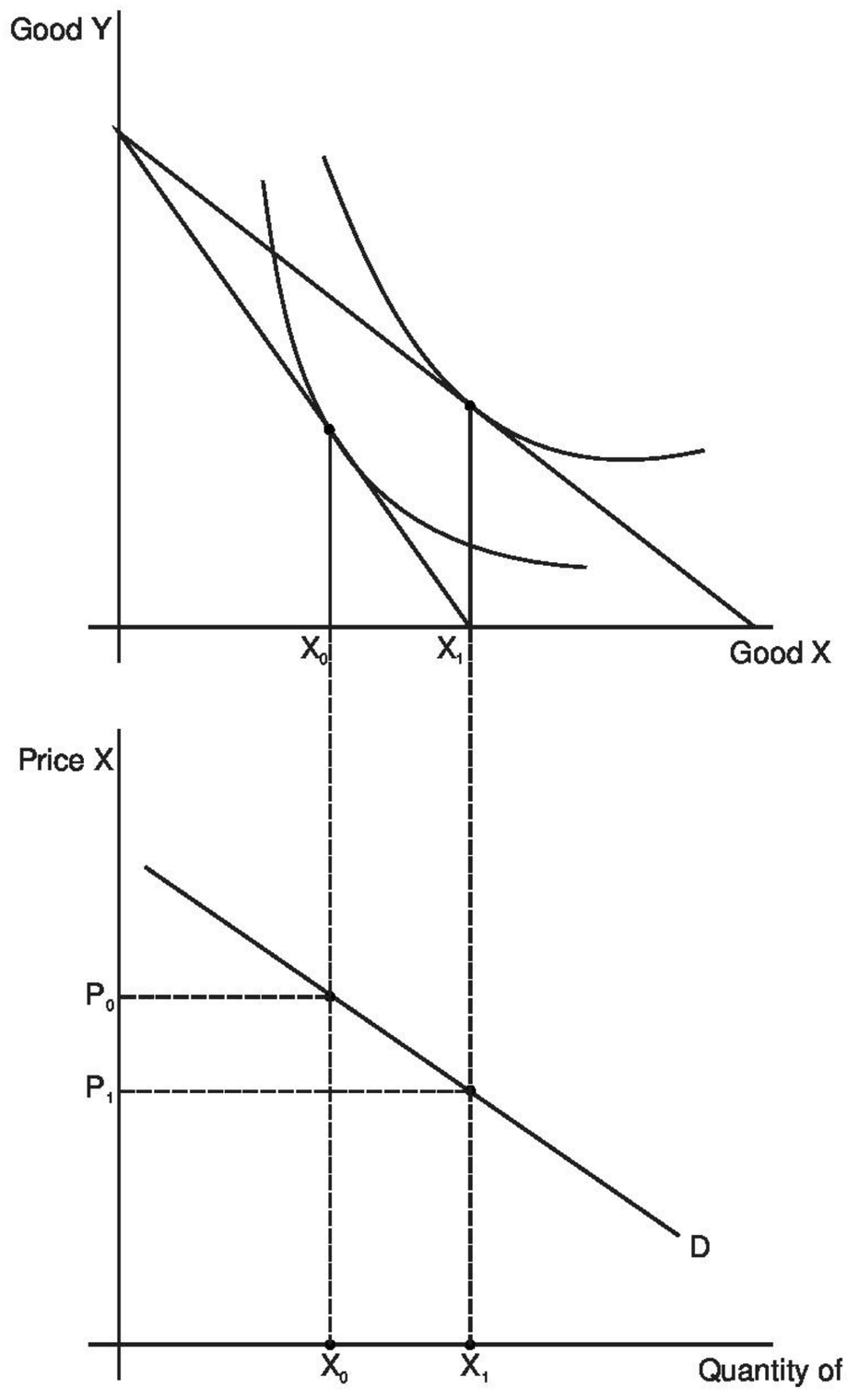
the product reduces marginal utility, hence MU/$ (1 mark), and the consumer keeps reallocating expenditures to cheaper goods till he regains the equilibrium (1 mark).

*Note: Answers discussing increase in price may also be rewarded.

6. (J12/41&43/2b)

(b) Discuss the extent to which indifference analysis and budget line may be used to determine the market demand for a good. [13]

Consumer's equilibrium is shown graphically i.e. the tangency of indifference curve and budget line. Budget line shifts pivotal outwards when the price of X falls. The new equilibrium shows higher quantity of X consumed. The initial quantity of X at the older consumer's equilibrium (higher price of X) and higher quantity of X at the new equilibrium point (lower price of X) should be shown on another panel of the price and quantity of X. This panel should be drawn exactly beneath the indifference curve and budget line, linking the quantities of X on both panels. As the decreased price of X raises its demand, a downward sloping demand curve is thus derived in the lower panel (Up to 4 marks for the explanation).



(Up to 4 marks for the diagram)

Market demand curve is the horizontal summation of individual demand curves (1 mark). For example, a market consisting of two (or more) individuals could be discussed, where an individual demands, say 50 units, and the other 25 units at the same price. The market demand will be the total of the two i.e. 75 units (Up to 2 marks).

The indifference curve and budget line can help derive a demand curve if individual indifference curves and budget lines of different consumers are identified (1 mark). However different individuals may react differently to a price change as all of them do not have the same set of preferences and choices (1 mark) so constructing a market demand curve may be tedious (1 mark).

*Note: Answers discussing increase in price may also be rewarded.

7. (N12/42/2a)

A study found that demand for tickets for exhibitions at a major art gallery had unitary price elasticity.

(a) Explain how the concept of diminishing marginal utility may be used to construct a demand curve for the product and whether that analysis still applies in the case of demand for tickets for the exhibitions. [12]

For knowledge and understanding of diminishing marginal utility (up to 4 marks)

Marginal utility (MU) is the utility derived from consuming an additional unit (1 mark). Marginal utility diminishes as additional units are consumed successively (1 mark), provided the quality of different units remains unchanged, the quantity used is reasonable, consumption is continuous, tastes and preferences of consumers remain unchanged (up to 2 marks)

Application of the effects of an increase in the price using a demand curve based on the marginal utility theory (up to 8 marks)

One needs to know the marginal utility of the product, marginal utility of money and the price of the product to ascertain the quantity demanded of the product at that price (up to 2 marks). Consumers attain equilibrium by equating the price of the product with MU (1 mark). A higher price of the product would mean the consumers would have to part with more dollars to buy the same product (1 mark) and given the unchanged marginal utility of money, he will expect greater utility from the product (1 mark), so units with lower MU will not be bought (1 mark). As MU diminishes with more units, the increase in price results in reduced quantity demanded (1 mark). A correctly drawn downward sloping demand curve and marginal utility curve (1 mark).

8. (N12/41/2b)

(b) Analyse how budget lines and indifference curves may be used to illustrate what happens for both a normal good and an inferior good when the price of the good increases at the same time as a consumer's income increases. [13]

Definition of Budget Line i.e. it shows combinations of X and Y a consumer can purchase with given income and prices (1 mark)

Definition of Indifference Curve i.e. it shows combinations of X and Y that provide the same utility and the consumer is indifferent among these combinations (1 mark)

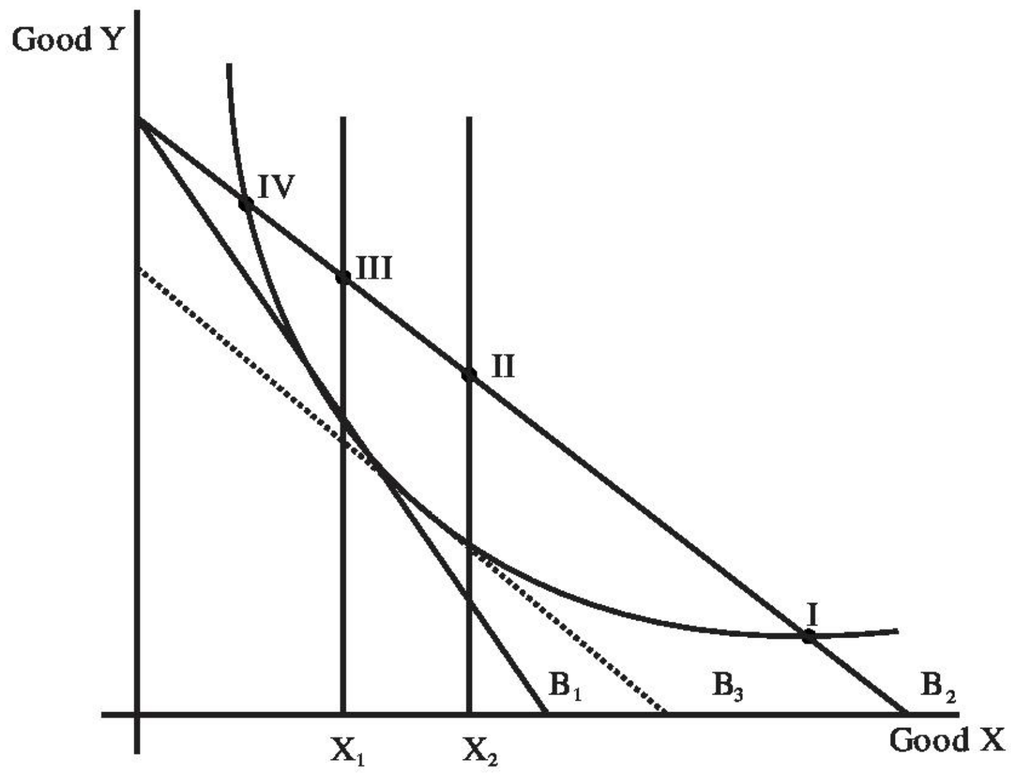
Impacts of increase in income (up to 5 marks)

Diagram 1 (up to 2 marks)

The initial budget line is x_1x_1, where the consumer buys x_1 units of commodity X and y_1 units of commodity Y. Increased income shifts the budget line towards x_2x_2 (1 mark) and the new consumer's equilibrium will be between points III and IV as the consumer chooses to move to a higher indifference curve as a result of increased income and purchasing power. However, the exact location of the new equilibrium depends on the consumer's perception of X and Y. Assuming that both X and Y are normal goods, the new consumer's equilibrium will be somewhere between point I and II, showing an increased demand for both X and Y (1 mark). However, if the consumer perceives Y as a normal good and X as an inferior one, the new consumer's equilibrium will be between points I and IV, showing a decreased demand for X and a higher demand for Y (1 mark). Assuming Y to be inferior and X to be a normal good, the new equilibrium will be between points II and III, showing an increased demand for X and a lower demand for Y as a result of increased income (1 mark). It is worth noting that both X and Y can be normal goods at the same time but both cannot be inferior (1 mark).

Impacts of decrease in price of X (up to 5 marks)

Diagram 2 (up to 2 marks)



The initial quantity purchased by the consumer is quantity x_1. The decrease in price of X causes a pivotal move to the new budget line B_2 (1 mark). To show the substitution effect separately, a hypothetical budget line B_3 is drawn, which is parallel to B_2 AND tangent to the initial indifference curve (1 mark). This budget line shows the new price ratio of X and Y but the unchanged income. According to the substitution effect alone, the consumer raises the demand of X from x1 to x_2. Substitution effect is always negative and raises the demand of relatively cheaper products (1 mark). However, real income effect may be positive or negative, depending on the nature of the product. The increased real income prompts the consumer to move to a higher indifference curve tangent to B_2. This is real income effect. Assuming that X is a normal good, the demand for X increases as a result of increased income (1 mark) and the new equilibrium will be to the right of x_2 (between I and II) (1 mark). In this case, income effect is positive and is reinforced by the substitution effect i.e. they both raise the demand for X (1 mark). However, if X is inferior, the new equilibrium will be between II and IV i.e. increased real income lowers the demand of X (1 mark). In this case, the income effect is negative and tries to outweigh the substitution effect (1 mark). In case the income effect is smaller than the substitution effect, the new equilibrium will be between II and III. Though the demand decreases as a result of increased income (negative income effect),

the net effect on demand is an increase in demand, as a stronger substitution effect outweighs the income effect. This is a case of non Giffen inferior goods. In case negative income effect is stronger and outweighs the substitution effect, the new equilibrium will be between III and IV. This is a case of Giffen goods, where a decrease in price decreases the demand and results in an upward rising demand curve.

Reserve 1 mark for conclusion

The net effect on the demand for the product depends on its nature and on the relative sizes of the changes in consumer income and price.

9. (N06/04/3a)

(a) My higher income will make me happier in the short run. In the long run I will become accustomed to it and my happiness will return to the previous level. There is no point, therefore, in earning higher income.

Explain the Law of Diminishing Marginal Utility and discuss whether it supports the idea that higher incomes increase happiness. [12]

Explanation of Law of Diminishing Marginal Utility (up to 6 marks)

Assuming other factors constant, a consumer receives lesser and lesser satisfaction from additional units of a product, when consumed successively (1 mark). Marginal utility is the utility derived from consuming an additional unit (1 mark). An accurately drawn downward sloping marginal utility diagram (1 mark). Example of a product on which the law applies, for example, the second car in the house adds less to the utility than the first (1 mark). Statement of assumptions of the law of diminishing marginal utility, such as, the quality of different units should be similar, units should be used successively and consumer preferences are unchanged (up to 2 marks).

Analysis of the link between income and happiness / utility (up to 4 marks)

Analysis that law of diminishing marginal utility is applicable on money / income (up to 2 marks)

Higher income increases affordability and allows consumers to access a greater variety of premium quality goods, leading to improved living standards and greater happiness. However, like any other commodity, marginal utility of the first few dollars earned is more than that of increments in income.

Analysis that law of diminishing marginal utility is not applicable on money / income (up to 2 marks)

Money, like any other commodity, adds to utility. However, some economists believe that the law of diminishing marginal utility does not apply to money. The initial few dollars earned are usually spent on necessities, but the additional income brings more comfort and luxuries, so the marginal utility of money increases (up to 2 marks).

For a reasoned conclusion (up to 2 marks)

Utility varies from individual to individual, so finding a precise and direct link between income and utility / happiness is a challenge (1 mark). Utility also varies over time, so it is difficult to compare utility of the short run with the long run (1 mark).

10. (N14/41/2a)

(b) Analyse whether there is a difference between:

- **the way the effects of an increase in price can be represented using a budget line and indifference curve, and**
- **the way the effects of an increase in price can be represented using a demand curve based on marginal utility theory. [13]**

Analysis of the effects of an increase in the price using a budget line and indifference curve and demand curve based on marginal utility theory (up to 9 marks)

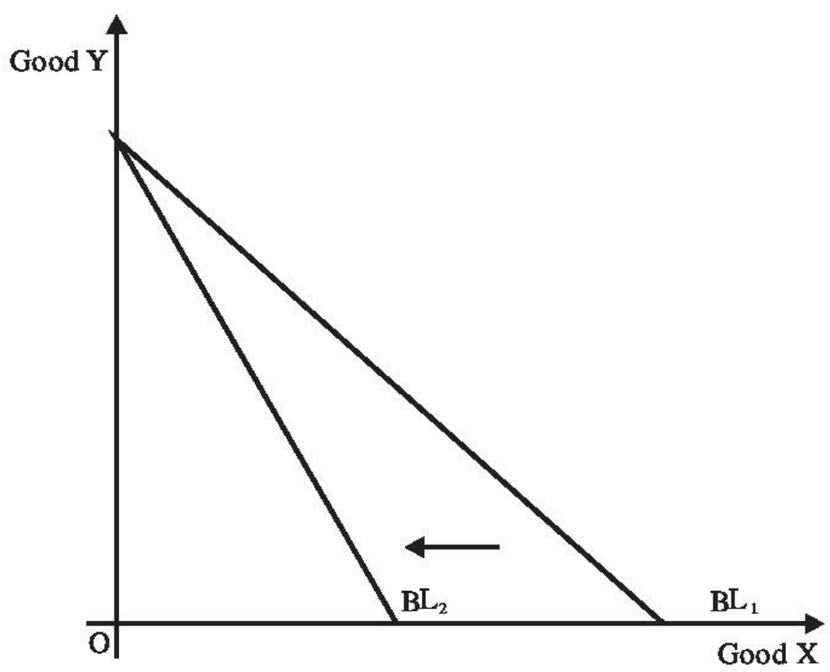
Analysis of the effects of an increase in the price using a budget line and indifference curve (up to 5 marks)

Definition of Budget Line i.e. it shows combinations of X and Y a consumer can purchase with given income and prices (1 mark)

Definition of Indifference Curve i.e. it shows combinations of X and Y that provide the same utility and the consumer is indifferent among these combinations (1 mark)

Identification that the consumer attains equilibrium and maximizes total utility, where the Indifference Curve is tangent to the Budget Line (1 mark)

1 mark for showing a pivotal inward shift of the budget line, showing the effect of an increase in either the price of commodity X or the price of commodity Y



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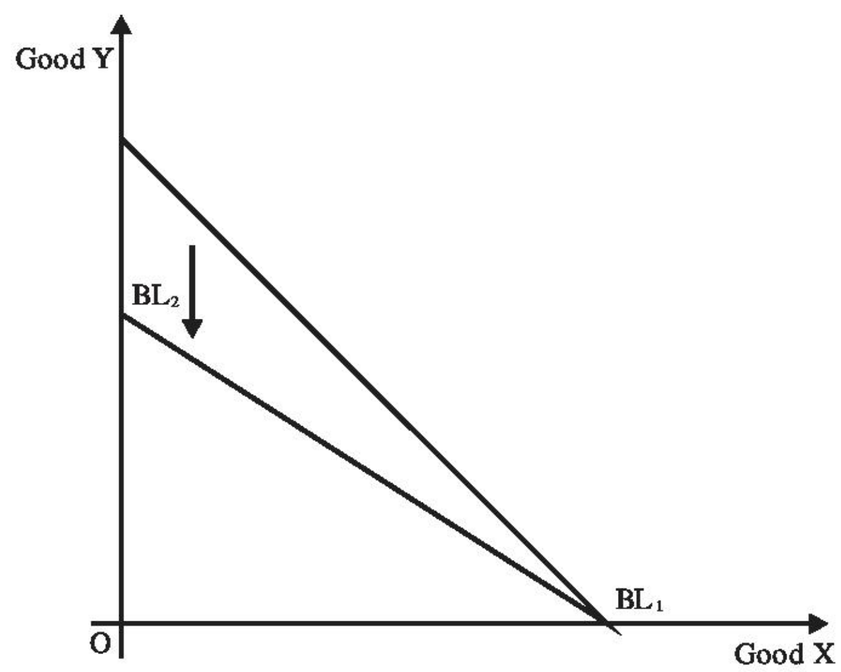
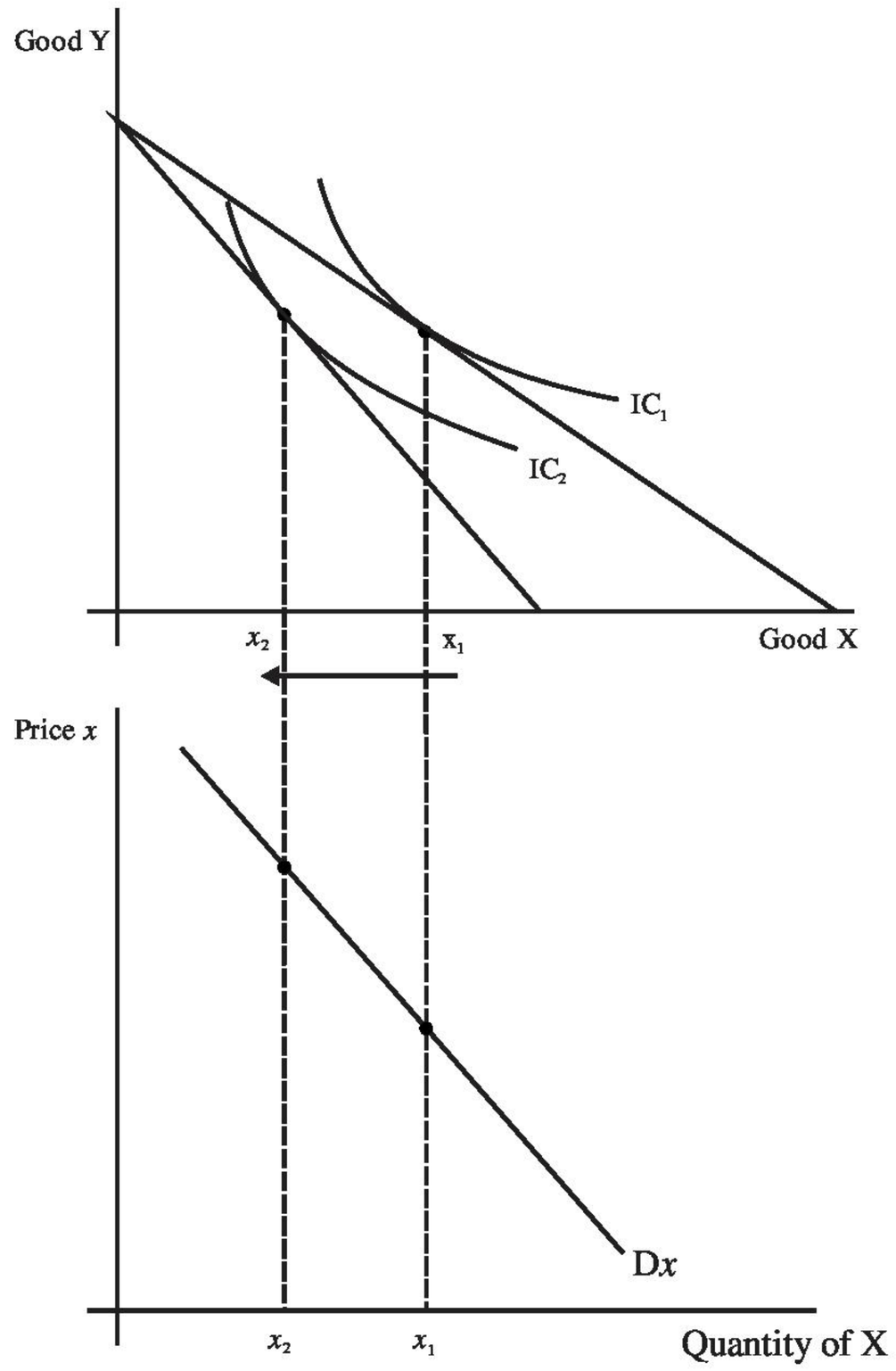


1 mark for showing the new equilibrium where a lower quantity of the product is purchased as a result of an increase in its price



Analysis of the effects of an increase in the price using a demand curve based on the marginal utility theory (up up to 5 marks)

One needs to know the marginal utility of the product, marginal utility of money and the price of the product to ascertain the quantity demanded of the product at that price (up to 2 marks). A higher price of the product would mean the consumers would have to part with more dollars to buy the same product (1 mark) and given the unchanged marginal utility of money, he will expect greater utility from the product (1 mark), so units with lower MU will not be bought (1 mark). As MU diminishes with more units, the increase in price results in reduced quantity demanded (1 mark).

Analysis of the differences between the two approaches (up to 4 marks)

The budget line alone is unable to show the change in quantity demanded of a product as a result of a price change. The budget line has to be used with indifference curves to determine the change in quantity demanded.

Demand curve cannot differentiate between normal and inferior goods, as demand curve slopes downward for both types of goods. Demand curve only analyses price effect, that is the effect of a price change over quantity demanded, whereas budget lines if used with indifference curves help to separate price effect into income and substitution effects, so are more able to distinguish between normal, inferior and Giffen goods.

11. (J16/43/2/a)

(a) Economists write about indifference analysis when studying consumer choice. Does this theory of consumer behaviour mean that a consumer is always indifferent when choosing between two products? [12]

Indifference curves show combinations of two goods which provide same utility to the consumer and the consumer cannot prefer one combination over another (1 mark). Indifference curves are never straight lines but are convex if viewed from the origin i.e. their slope diminishes throughout and they become more and more flat (1 mark). The convex shape of indifference curves is because of diminishing marginal utility (1 mark).

Marginal Utility (MU) is the utility derived from consuming an additional unit (1 mark). According to the Law of Diminishing Marginal Utility, additional units of a product when consumed successively give lesser and lesser satisfaction/MU (1 mark).

When a consumer moves along an indifference curve i.e. chooses to have more units of X in exchange of Y, marginal utility (MU) of Y will rise and MU of X will fall (1 mark). Thus, he will be willing to give up lesser and lesser units of Y to have one more X. Slope of indifference curve, also known as Marginal Rate of Substitution (MRS) is dY/dX or MUx/MUy falls throughout (1 mark). While moving along an indifferent curve, the total utility remains unchanged as the utility lost by consuming fewer Y is exactly compensated by utility gained by consuming more X (1 mark).

Between two indifference curves, there are an infinite number of indifference curves. All combinations on an indifference curve provide the same utility to the consumer but combinations on a higher indifference curve show greater / higher utility. Thus, a consumer is indifferent between combinations along one indifference curve, but he will prefer combination of goods on a higher indifference curve to that on a lower one. (Up to 4 marks)

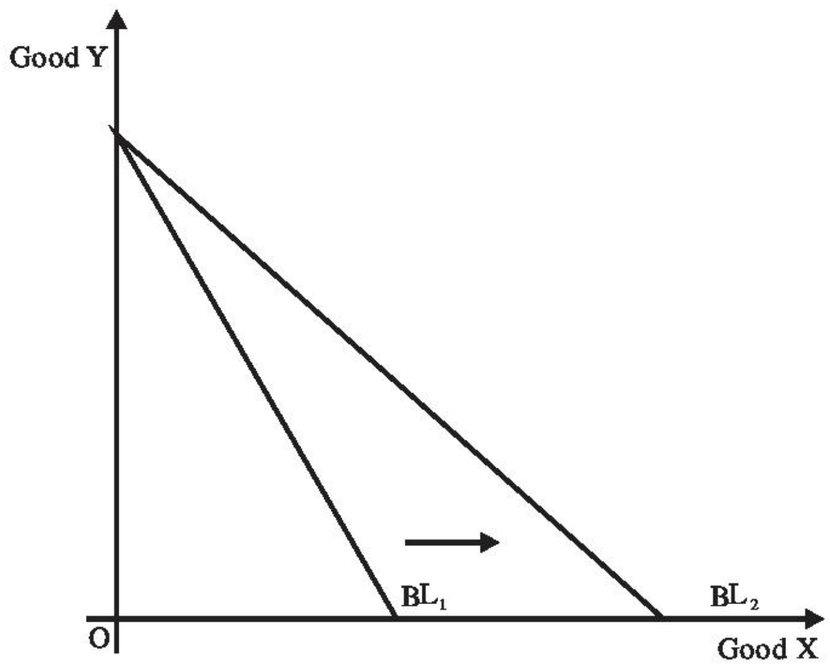
12. (J16/43/2/b)

(b) Discuss whether the use of a demand curve and budget lines are similar in the way they represent what will happen if the price of a good falls. [13]

Knowledge and Understanding of Budget Line and effects of a fall in the price over budget line (up to 3 marks)

Definition of Budget Line i.e. it shows combinations of X and Y a consumer can purchase with given income and prices (1 mark)

1 mark for graphically showing the budget line and 1 mark for showing a pivotal outward shift of the budget line, showing the effect of a decrease in either the price of commodity X or the price of commodity Y



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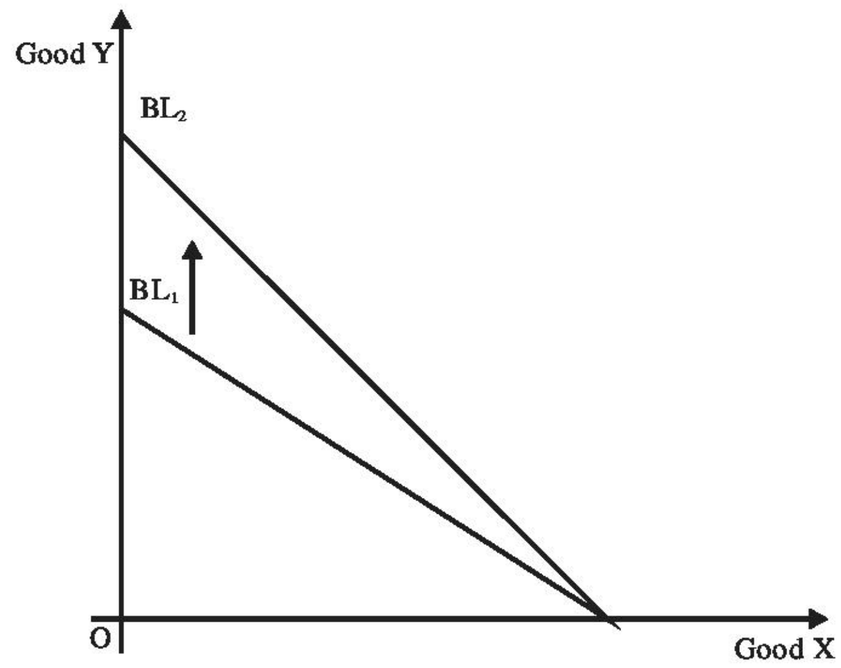


Knowledge and Understanding of Demand Curve (up to 3 marks)

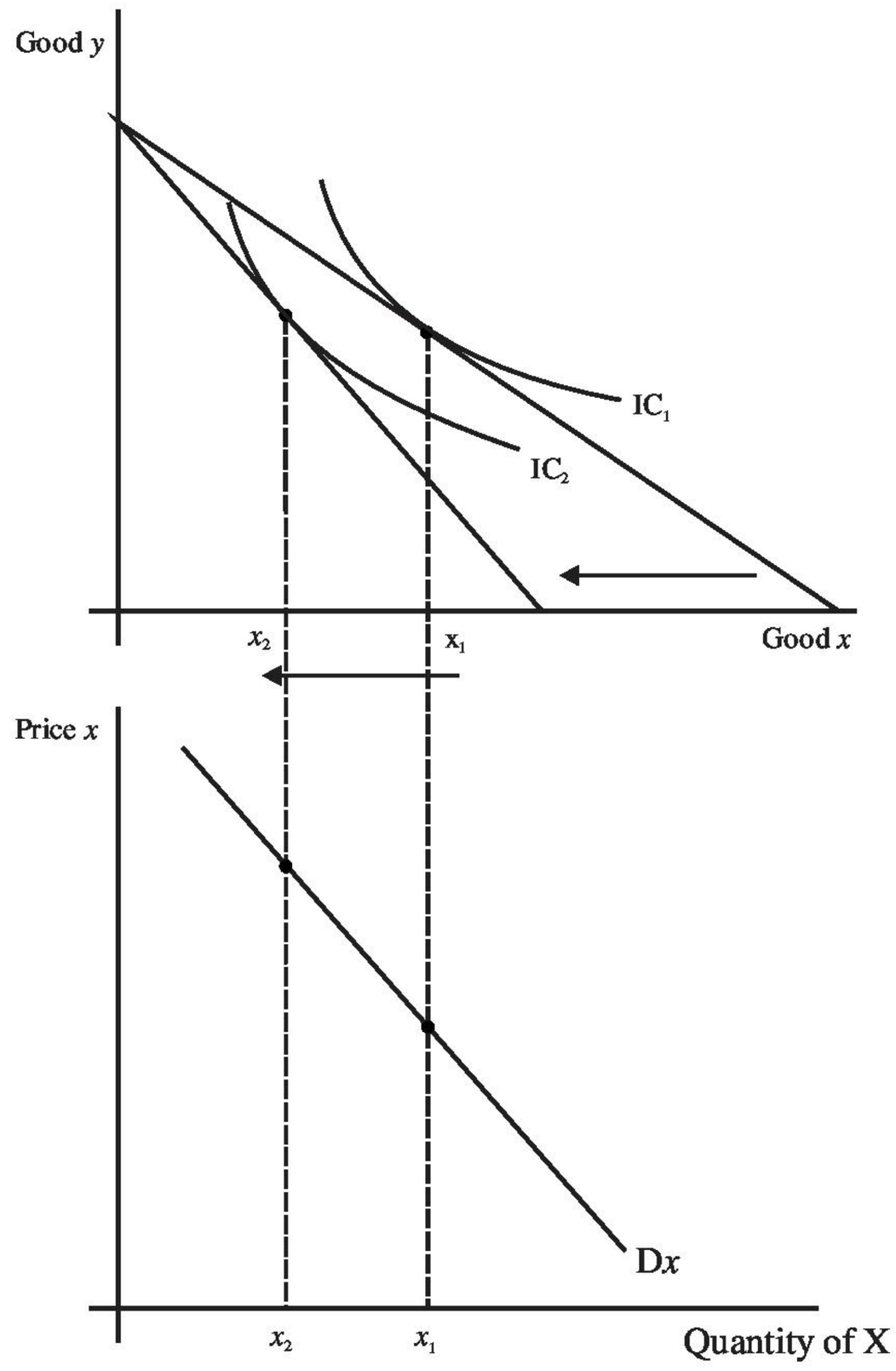
Demand curve shows relationship between price and quantity demanded (1 mark). In the panel of price and quantity demanded, downward sloping demand curve shows greater quantity is demanded at lower prices (1 mark). The theory of demand is based on the Law of Diminishing Marginal Utility (1 mark).

Analysis of the similarities and differences between the two approaches (up to 7 marks)

Both demand curve and budget line can be used to derive the change in consumer purchases (1 mark), however, while demand curve directly relates to the price and quantity of one good bought, budget lines relate to the possibility of buying two goods given an income and given prices (1 mark).

The budget line alone is unable to show change in quantity demanded of a product as a result of a price change (1 mark) unless it is also used with the indifference curve and then the quantity plotted on another diagram against price (1 mark).

The following diagram, though not compulsory for full marks, can be used to augment the explanation.



Demand curve cannot differentiate between normal and inferior goods, as demand curve slopes downward for both types of goods (1 mark). Demand curve only analyses price effect, that is the effect of a price change over quantity demanded (1 mark), whereas budget lines if used with indifference curves help to separate price effect into income and substitution effects (1 mark), so are more able to distinguish between normal, inferior and Giffen goods (1 mark).

13. (N16/41/3a)

(a) Explain the meaning of an indifference curve and show to what extent indifference curves can be used to determine a consumer's demand curve for a product. [12]

Meaning of Indifference curve (up to 3 marks)

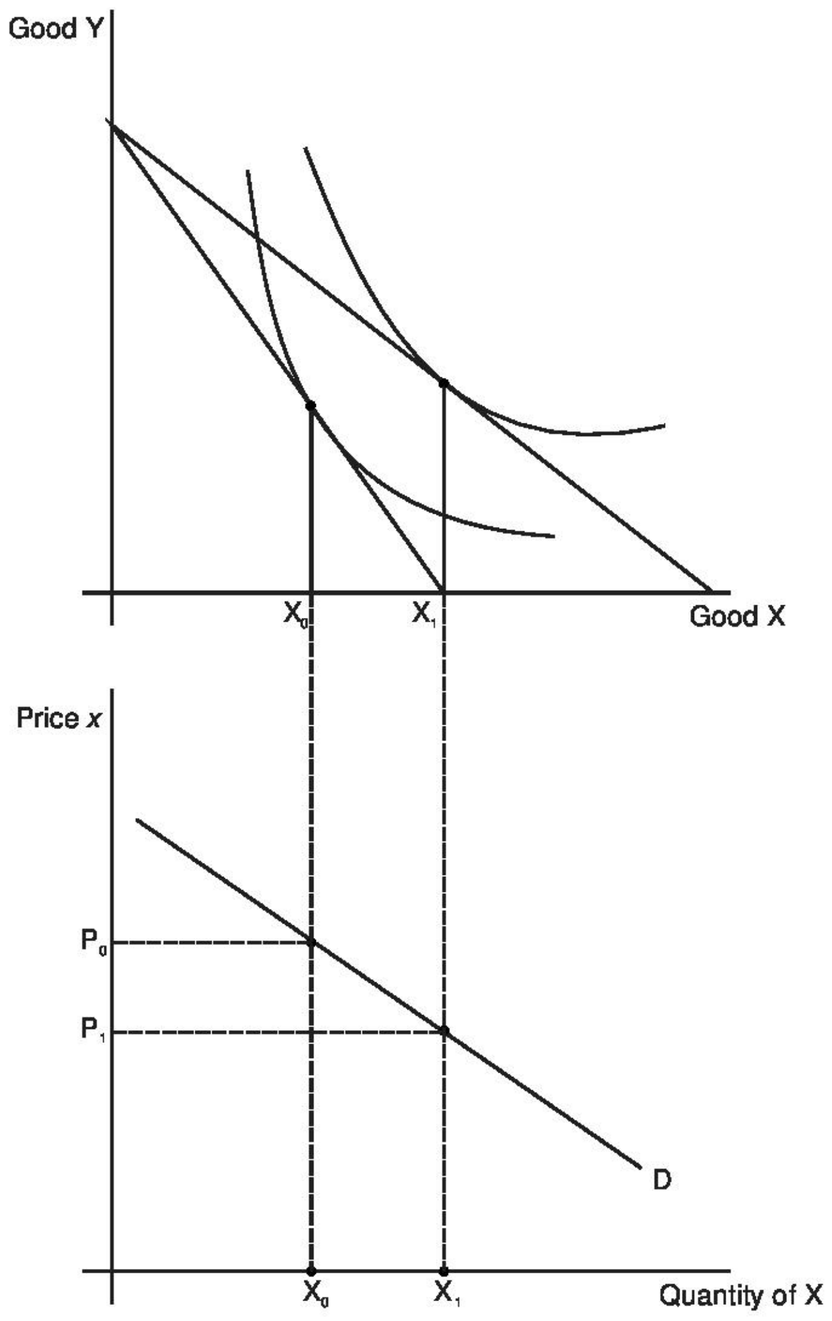
An indifference curve shows combinations of two goods that provide same utility to the consumer. Along an indifference curve, total utility remains unchanged. The indifference curve is downward sloping but is never a straight line. Its slope is MRS (Marginal Rate of Substitution) which decreases when more and more units of X are consumed, making the indifference curve flatter and flatter when viewed from the origin. MRS (dY/dX) shows number of units of Y, the consumer is willing to give up for one more X. The Marginal Utility (MU) of X falls with increased consumption

of X, thus the consumer would be willing to give up fewer and fewer units of Y for additional units of X, resulting in falling MRS.

(Up to 3 marks for the explanation that indifference curves can be used to determine a consumer's demand curve for a product)

Consumer's equilibrium is shown graphically i.e. the tangency of indifference curve and budget line. Budget line shows combinations of two good a consumer can purchase with given income and prices. The consumer was buying X_0 initially. However, the Budget line shifts pivotal outwards when the price of X falls from P_0 to P_1. The new equilibrium shows higher quantity of X (X_1) consumed. The initial quantity of X at the older consumer's equilibrium (higher price of X) and higher quantity of X at the new equilibrium point (lower price of X) is shown on another panel of the price and quantity of X drawn exactly beneath the indifference curve and budget line, linking the quantities of X on both panels. As the decreased price of X raises its demand, a downward sloping demand curve is thus derived in the lower panel.

(Up to 3 marks for the diagram)



(up to 3 marks for discussing the extent to which indifference curves can be used to determine a consumer's demand curve for a product.

The indifference curve and budget line can help derive a demand curve if individual indifference curves and budget lines of different consumers are identified (1 mark). However different individuals may react differently to a price change as all of them do not have the same set of preferences and choices (1 mark) so constructing a market demand curve may be tedious (1 mark).

*Note: Answers discussing increase in price may also be rewarded.

14. (N16/41/3b)

(b) Consider whether indifference curves can be used to analyse the effects of a fall in the price of a good on the demand for both a normal good and a Giffen good. [13]

The budget line pivots when either price of commodity X or Y changes. Diagram 2 shows the impact of reduction in price of X on the budget line. Before price reduction, the consumer was buying x_1 units but after the reduction in price of X, the quantity demanded rises to x_2. This is known as price effect. Price effect can be divided into substitution and real income effects. Diagram 3 illustrates substitution and real income effects separately.

Diagram 2

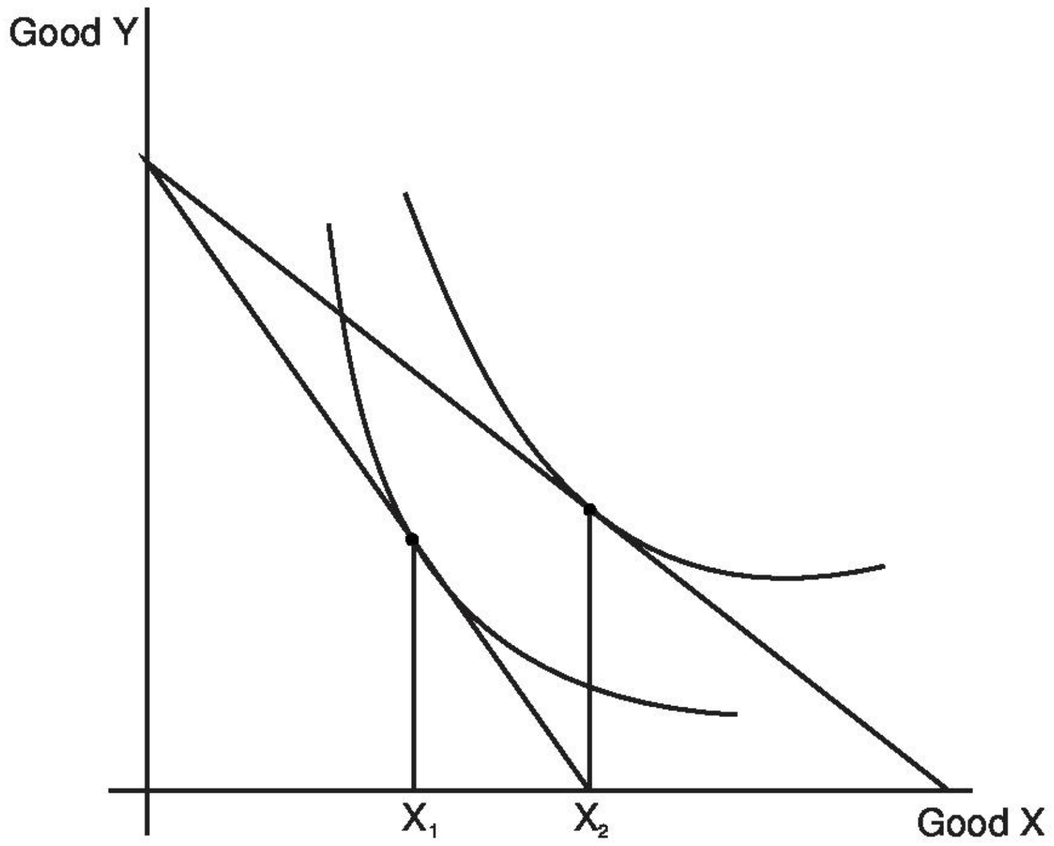
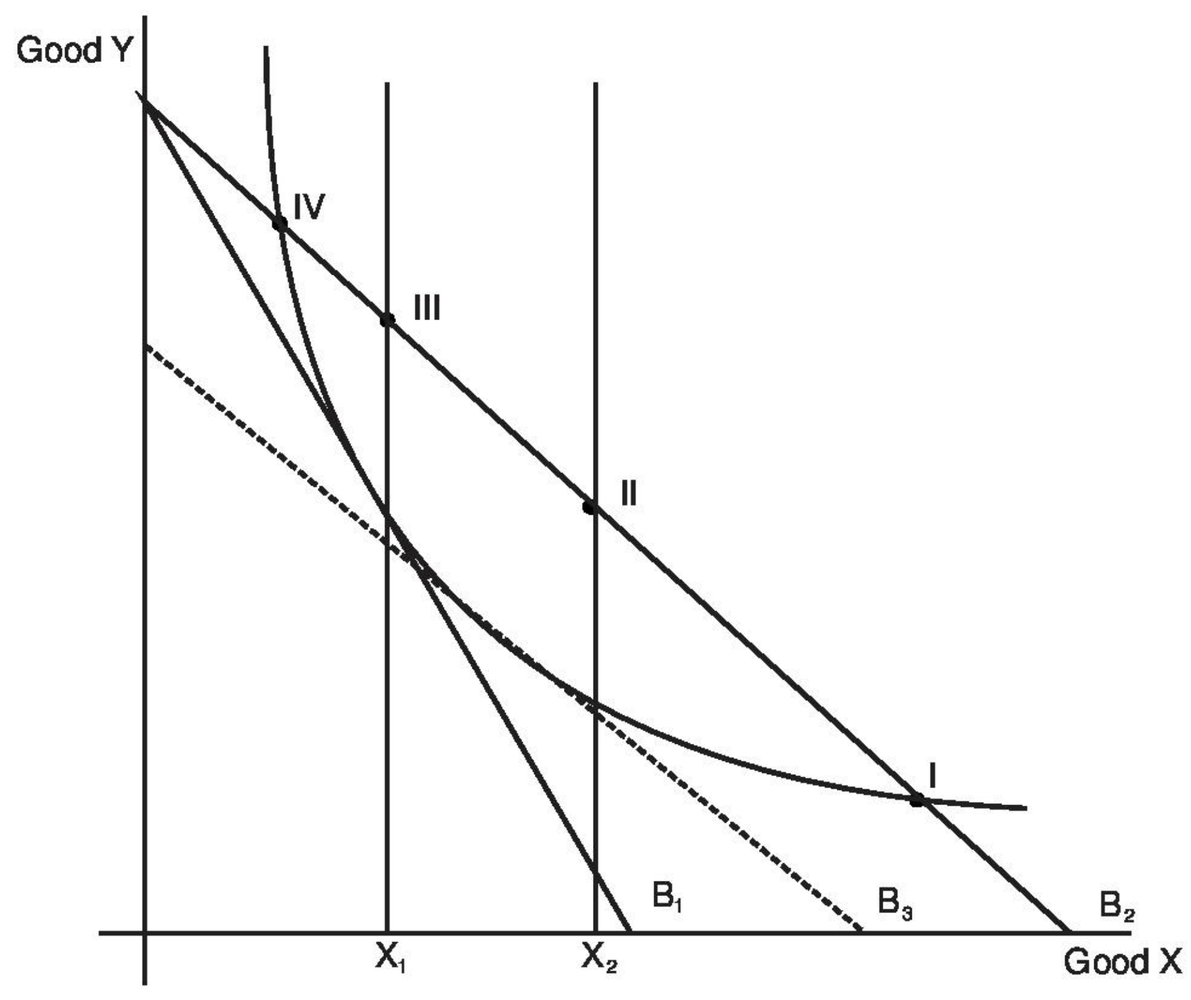


Diagram 3



The initial quantity purchased by the consumer is quantity x_1. The decrease in price of X causes a pivotal move to the new budget line B_2. To show the substitution effect separately, a hypothetical budget line B_3 is drawn, which is parallel to B_2 AND tangent to the initial indifference curve. This budget line shows the new price ratio of X and Y but the unchanged income. According to the substitution effect alone, the consumer raises the demand of X from x_1 to x_2. Substitution effect is always negative and raises the demand of relatively cheaper products. However, real income effect may be positive or negative, depending on the nature of the product. The increased real income prompts the consumer to move to a higher indifference curve tangent to B_2. This is real income effect. Assuming that X is a normal good, the demand for X increases as a result of increased income and the new equilibrium will be to the right of x_2 (between I and II). In this case, income effect is positive and is reinforced by the substitution effect i.e. they both raise the demand for X. However, if X is inferior, the new equilibrium will be between II and IV i.e. increased real income lowers the demand of X. In this case, the income effect is negative and tries to outweigh the substitution effect. In case negative income effect is stronger and outweighs the substitution effect, the new equilibrium will be between III and IV. This is a case of Giffen goods, where a decrease in price decreases the demand and results in an upward rising demand curve.

For explaining substitution and income effects (1 mark).

For explaining substitution is negative for all commodities (1 mark)

For explaining income effect is positive for normal goods (1 mark) and negative for inferior goods (1 mark)

For explaining that income effect is negative and stronger than substitution effect for Giffen goods (1 mark)

Substitution effect and income effect reinforce each other and result in a downward sloping demand curve for normal goods (2 marks).

Negative income effect outweighs substitution effect for Giffen goods and result in an upward rising demand curve (2 marks).

Diagram (up to 4 marks)

UNIT 2

Cost Curves, Size of Firms

Syllabus 2019 –21

ON14/P43/2
MJ14/P43/Q2
ON12/P41/Q3a
ON11/P42/Q3b
MJ15/P41/Q5a
MJ15/P41/Q5b
MJ11/P41/Q3a
MJ11/P43/Q4a
MJ06/P04/Q4
MJ16/P43/Q3a

A Level
Economics
Topical Paper 4

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UNIT-2 COST CURVES, SIZE OF FIRMS

1. (N14/43/2)

The link between marginal utility and price has a similar significance for the consumer as the link between marginal cost and price for the producer.

Consider whether this statement is an accurate reflection of the economic analysis of consumer and producer equilibrium. [25]

MS

Explanation of consumer equilibrium MUx / Px = MUy / Py.

Explanation of equilibrium for the firm MC = MR. MR and price only the same in perfect competition.

Here there may be a similarity in the equilibrium. The significance mentioned in the statement is not correct in other market structures. [25]

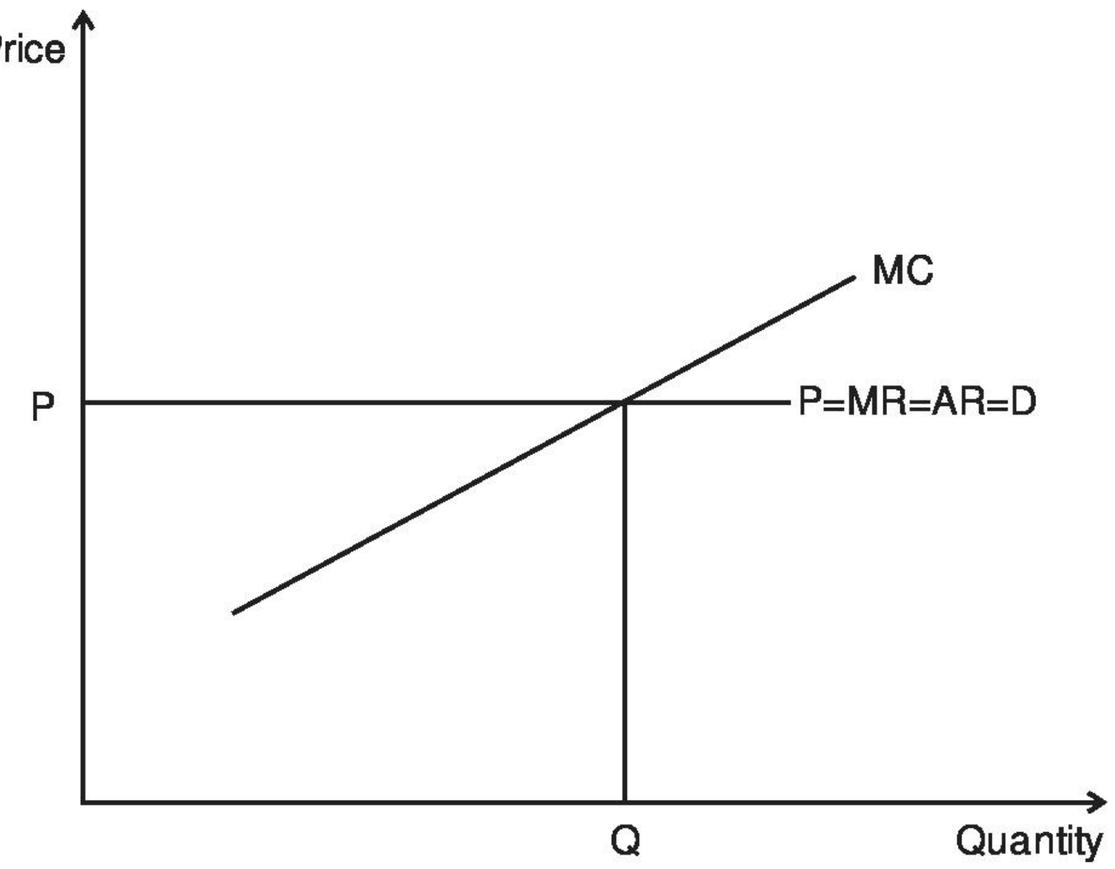
Suggested Answer

Rational consumers allocate resources/expenditures among different products to maximize total utility. Total utility is maximized when the marginal utility per dollar from last units of all commodities are equal. By maximizing total utility, the consumer achieves his equilibrium, and mathematically, this condition is shown with the help of an equation i.e. $\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$. At this point, the consumer does not have any incentive to reallocate expenditures among different goods, as the utility gained by consuming more of one product will exactly be offset by the utility lost by having a few of the other products. However, a change in the price of either of the products converts equilibrium into disequilibrium and prompts consumers to reallocate expenditures. For example, if the price of a product falls, the marginal utility per dollar from that product rises, and becomes higher than the marginal utility per dollar of the product whose price has not changed. In order to increase / maximize total utility, consumers should allocate more expenditures to products whose marginal utility per dollar is more. Reallocation of expenditures towards the cheaper product (whose price has fallen) increases the total utility as the gain in utility by consuming more units of the cheaper good outweighs the utility lost by consuming fewer units of the other product. Increased consumption of the product reduces marginal utility, as well as MU per dollar. The process of reallocating expenditures (i.e. buying more of the cheaper product at the expense of the other) continues till MU per dollar becomes equal for all commodities, and the consumer regains the equilibrium.

A firm intends to maximize profits and achieves the equilibrium when the revenue generated from selling the last unit i.e. MR becomes equal to the cost incurred on producing that unit i.e. MC. In order to maximize profits, the firm should produce all units whose MR exceeds MC, and decrease output if MR falls short of MC. A profit maximizing firm should not change output when MR of the last unit produced equals its MC.

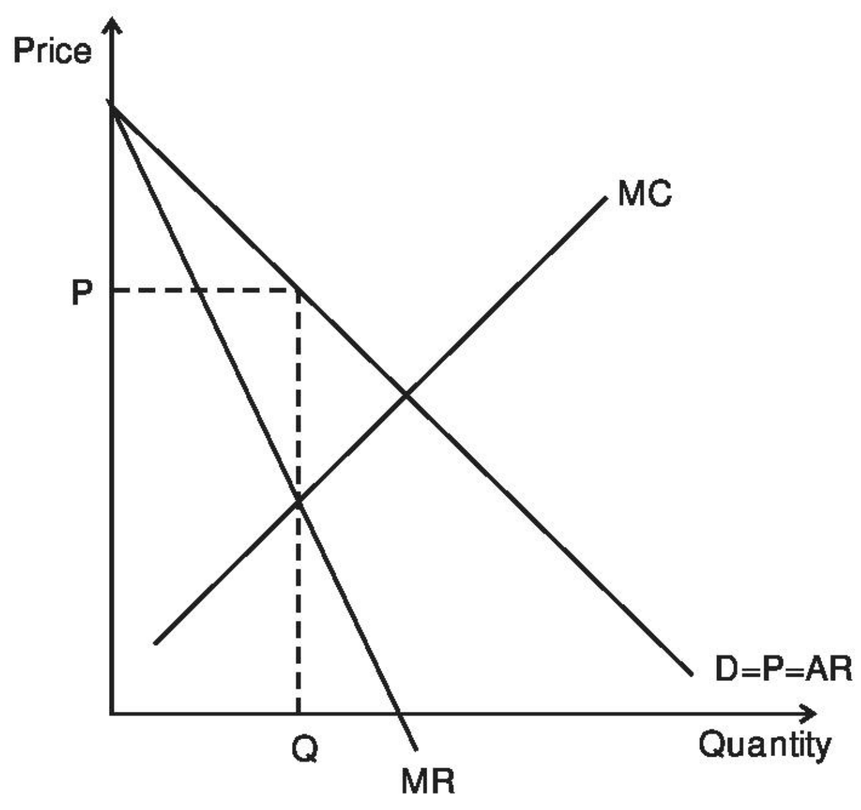
A perfectly competitive firm can sell more at the same price, so the sale price equals MR. Thus, a perfectly competitive profit maximizing firm (which equates MR and MC), also succeeds in equating the sale price and MC, as shown in Diagram 1. Thus, for a profit maximizing perfectly competitive firm, equating the price and marginal cost is a condition of equilibrium. Similarly, a utility maximizing consumer achieves his equilibrium by equating marginal utility divided by price for the last units of all commodities.

Diagram 1



However, a monopoly can either control price or output, but cannot control both simultaneously. It faces a tradeoff between higher price and more quantity sold. The downward sloping demand curve for a monopoly (and a monopolistically competitive firm) means that it has to decrease price on ALL the units to sell more, resulting in a divergence between the sale price and MR i.e. the sale price exceeds MR. A profit maximizing monopoly (and a monopolistically competitive firm) cannot equate sale price and MC, as equating MR and MC would mean that the sale price exceeds MR as well as MC, as shown in Diagram 2. Thus, the condition of equating the sale price and MC guarantees equilibrium only for a profit maximizing perfectly competitive firm, but not for other market structures, such as monopoly.

Diagram 2



2. (N12/41/3a)

(a) Explain why a firm's short-run average cost curve is usually drawn as a U shape and explain the link between the short-run average cost curve and long-run average cost curve of a firm. [12]

Knowledge of the concept of average cost either with a correct formula or a statement is expected, though it will not be given credit.

Explanation of diminishing returns with a clear definition supported either with numerical figures or with the help of an example (1 mark)

Recognition that marginal cost rises when there are diminishing returns (1 mark)

A correctly labelled U shaped short run average cost curve (1 mark)

The average cost falls initially, since the average fixed cost (a component of average cost) falls as fixed costs are spread over large output, and the average variable cost (the other component of average cost) falls too initially, as it requires lesser and lesser variable inputs to increase output because of increasing returns (1 mark). However, after some time, the average variable cost begins to rise (because more and more quantities of variable input will be required to increase output due to diminishing returns) outweighing any decrease in AFC leading to a rise in average cost (1 mark).

When the average cost of a certain unit/branch/plant of a business increases to a high level, making it economically infeasible to keep increasing output, the firm is prompted to open another unit/branch/plant (1 mark) and that requires a change in quantities of all inputs i.e. a change in the scale/size of the business (1 mark). The firm achieves economies of scale and moves downward along its long run average cost curve (1 mark). However, long run average cost starts to rise when there are diseconomies of scale (1 mark). So the second SRAC curve (applicable to the second unit/branch/plant) will be lower than the first, and the third will be lower than the second (1 mark), because of economies of scale. However SRAC for additional units/branches/plants will be higher than the previous ones when there are diseconomies of scale (1 mark). The long run average cost touches (or envelopes) all SRAC curves (1 mark) and is U shaped because of economies and then diseconomies of scale. A correctly labelled LRAC with multiple SRAC curves (1 mark).

[Maximum 12 marks]

3. (N11/42/3b)

(b) Economic theory states that large firms have lower average costs than small firms.

Discuss whether this statement is necessarily true. [13]

A clear definition of economies of scale (1 mark). It is the reduction in average cost because of increased scale or size of business (no mark for definition if costs are mentioned instead of average cost and/or outputs are mentioned instead of scale or size of the business).

Larger businesses enjoy a lower average cost compared to smaller businesses as they can achieve economies of scale (1 mark) such as managerial, commercial, technical, financial, risk bearing and marketing (maximum 4 marks for identifying and explaining the different types of E.O.S with examples; no more than 2 marks if the various types are only identified, but not explained). However, larger businesses can become too large and may experience diseconomies

of scale (1 mark). Identification of different types of diseconomies of scale such as managerial diseconomies, increased wastage, poor coordination, increased chances of theft and pilferage, increased challenges in motivating workers and their explanation (maximum 4 marks). Conclusion: Normally it is true that larger businesses have lower average cost because of economies of scale, but if larger businesses experience diseconomies of scale, their cost per unit may be higher than that of smaller businesses (2 marks). A correctly labelled U shaped LRAC clearly showing economies of scale when LRAC is decreasing and diseconomies when LRAC starts to increase (1 mark).

[Maximum 13 marks]

4. (J15/41/5a)

(a) Explain why manufacturers differentiate their products and describe the characteristics of two market structures where product differentiation occurs. [12]

MS

Differentiation is branding of goods, advertising by brand names, to increase consumer loyalty and increase profits. Description of two market structures monopolistic competition, oligopoly and monopoly. (Duopoly is not on the syllabus).

Suggested Answer

Product differentiation is an attempt of the firms to add some unique selling points in their products to make them look different, better and superior to their rivals. These unique selling points could be real, like better quality, or perceived, like branding. Advertisement, design, packaging and style of the product are the tools firms can use to differentiate their products from those of competitors. A successful product differentiation reduces the price elasticity of demand and enables firms to control price. It also gives a competitive edge to the firms, reducing existing and potential competition.

A monopolistically competitive market consists of a large number of small-sized firms, which sell differentiated goods. Entry and exit in this market is easy; however, unlike in perfect competition, where the firms lose all customers if the price is raised, a monopolistically competitive firm can retain some of its customers at higher prices, resulting in a downward sloping demand curve. The ability to retain customers depends upon the degree of product differentiation. The demand curve of a monopolistically competitive firm will be steeper if the firm has successfully differentiated the product.

Another market structure that differentiates products is oligopoly. This is a market that is dominated by a few large sized firms, which have high market share and high concentration ratio i.e. majority of the output is produced by a few large firms. Most of the markets in the real market, such as automobiles, cell phone manufacturers, electronics etc., are oligopolies. These firms differentiate their products with the help of designs, features, colours and other attributes. Unlike other market structures, where firms are usually small, and their actions have no impact on others, the firms in an oligopoly are strategically interdependent, and the actions of one firm affect others and vice versa. This strategic interdependence leads to uncertainty, as the outcome of a strategic decision depends on the reaction of competitors, which cannot be predicted accurately. The demand curve in oligopoly is missing, as, because of strategic dependence and uncertainty,

forecasting demand at different prices becomes a challenge. Entry in this market is difficult, as, to compete with large sized firms, more resources and funds would be needed.

5. (J11/41/3a), (J15/41/5b)

(a) Analyse, with the aid of a diagram, whether there is a link between diminishing marginal returns and economies of scale. [12]

(b) Analyse and consider the extent of the link between marginal cost, diminishing returns and economies of scale. [13]

MS

Explanation of marginal cost, diminishing returns and economies of scale. There are three links to discuss m.c to diminishing returns; m.c to economies of scale; diminishing returns to economies of scale. There is a link in the short run between marginal cost and marginal product and thus to diminishing returns; there is only an indirect link between diminishing returns in the short run and economies of scale in the long run (via LRAC curve); there is a theoretical long-run marginal cost but it is not directly linked to economies of scale and the short run marginal cost is not linked to economies of scale.

Suggested Answer

Marginal cost is the cost incurred on the production of an additional unit. Marginal returns / marginal product is the increase in output because of an extra variable input, usually labour. Diminishing marginal return is applicable in the short run where the quantity of at least one input is assumed to be fixed. According to this law, when more and more quantities of a variable input, such as labour, are added to a given quantity of a fixed input, such as land or capital, the additional inputs give lesser and lesser output, i.e. diminishing marginal returns.

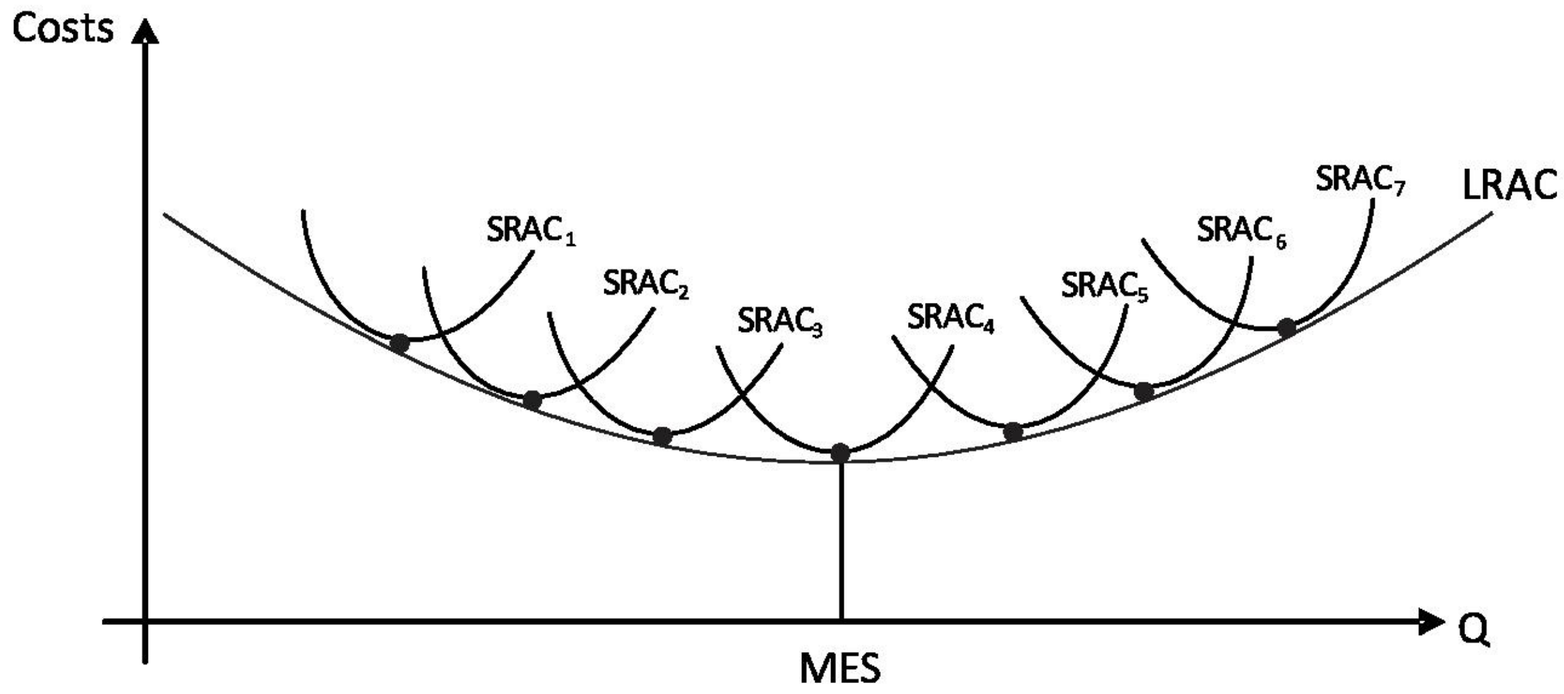
As more and more quantities of variable inputs are added to a fixed input, the fixed input becomes overtaxed / overburdened, reducing its availability for the variable input, resulting in lesser marginal returns. It is assumed that all units of the variable input, such as labour, get the wage at the unchanged rate, so diminishing returns means rising marginal cost.

Economies of scale is a reduction in per unit / average cost because of increased size of the business. For example, a larger business can borrow at relatively lower mark up and gets financial economies of scale. Similarly, larger businesses get bulk discounts, which is an example of commercial economies of scale. Economies of scale are possible only in the long run, as the size / scale of business can change only in the long run.

There is an indirect relationship between diminishing returns, which are possible only in the short run, and economies of scale, which are possible only in the long run.

Short run average cost (SRAC), i.e. total cost divided by quantity, initially falls not only because of increasing returns, but also due to reduction in average fixed cost, as fixed costs are divided over a larger output. However, SRAC begins to rise when diminishing returns settle and the reduction in average fixed cost becomes insignificant. This prompts the firm to open another plant / unit / branch, which is possible only in the long run. The cost of operating the second plant i.e. $SRAC_2$ is lower than that of the first i.e. $SRAC_1$ because of economies of scale. The firm continues to expand and enjoy economies of scale, but because of control, coordination and communication issues, and due to the inability to motivate workers in a larger organization, diseconomies of scale

set in. SRAC of new plants / units becomes higher than the previous ones in such cases. The curve that touches the minimum points of all SRACs is the long run average cost and is often called the envelope curve as it envelopes the minimum points of SRAC. The falling portion of this curve shows the falling long run average cost and encourages firms to expand and grow. The rising portion of long run average cost is a disincentive to grow in size and open more plants, so the optimal size of the business i.e. Minimum Efficient Scale (MES) is where the long run average cost is the lowest.



It is hard to establish a direct link between short run and long run marginal cost with economies of scale, as the former is additional cost incurred on producing an extra unit, whereas the latter is influenced by the long run per unit cost. However, diminishing returns raise marginal cost and the average cost begins to rise when the marginal cost is higher than the average cost.

6. (J11/43/4a)

(b) Discuss whether it is always advantageous for a firm to grow in size. [13]

For a discussion on the advantages and disadvantage for firms of growing in size (up to 9 marks)

For a discussion on the advantages for firms of growing in size (up to 6 marks)

Firms growing in size may achieve various types of economies of scale (up to 4 marks - one mark each for identification of one type of economy of scale and relevant explanation).

A larger sized firm has greater control over price and is in a better position to dominate the market (1 mark).

A large sized firm can force smaller firms to leave the industry and can enjoy a monopoly power (1 mark).

Larger firms can spend more on research & development and on innovating new products, making it harder for new firms to enter, and are thus able to enjoy monopoly power in the long run (1 mark).

For a discussion on the disadvantages for firms of growing in size (up to 6 marks)

It becomes difficult to control and coordinate in a larger firm, leading to more pilferage and wastage, resulting in diseconomies of scale and rising average cost (up to 2 marks).

It becomes difficult to motivate and inspire workers in a larger firm (1 mark).

The owners may lose personal contact with their customers, resulting in loss of their competitive edge over their rivals (1 mark).

Large firms often become too rigid and inflexible and fail to promptly respond to customers' requirements (1 mark).

The size of the market may not be large enough to justify the large size of the business (1 mark).

For an evaluation whether firms should grow in size (up to 4 marks)

A business should grow in size if economies of scale are available (1 mark) and the market size is large (1 mark). However, delegation of power and authority to the middle management is essential for better performance and motivation of workers (1 mark). Firms growing in size should also have adequate working capital / finances as the growth can benefit only if firms have the funds to finance the growth (1 mark).

7. (J06/04/4)

Large organizations face no competition. There is, therefore, no choice. Small competitive businesses are a better means of providing for consumers' needs.

Do you agree with this argument? **[25]**

For knowledge and understanding (6 marks)

For understanding of imperfect markets (up to 4 marks)

An imperfect market is usually characterized by a few (1 mark) large firms (1 mark) selling a differentiated product (1 mark). Entry into this market is usually difficult (high entry barriers) (1 mark). Knowledge of the customers is not perfect (1 mark).

For understanding of large and small sized firms (up to 2 marks)

Large firms usually have higher market share / concentration ratio (1 mark). They also have high capital employed (1 mark), high sales turnover (1 mark) and a large number of employees (1 mark).

For application (4 marks)

Since larger firms have a higher market share, only a few firms will be required to produce a given industry's output (1 mark), resulting in less competition. Oligopoly and monopoly are examples of imperfect markets (1 mark) and large firms are common in these markets (1 mark). A monopolistic competition is also an imperfect market; however, firms in this market structure are usually small (1 mark).

For analysis (8 marks)

For a discussion on large firms being a poor means of providing consumer needs (up to 5 marks)

Large businesses are more capable of influencing the market price and output (1 mark). This allows them to exploit consumers by charging higher prices (1 mark), restricting output (1 mark) and producing poor quality goods (1 mark). They earn high profits and can spend them on advertising / promoting / marketing their goods (1 mark), making the demand even more inelastic (1 mark) and imposing greater entry barriers (1 mark).

For a discussion on small firms being a better means of providing consumer needs (up to 5 marks)

Smaller businesses provide more variety to consumers (1 mark) and have to charge low prices to stay competitive (1 mark). They are more flexible and respond more easily to customer requirements (1 mark) and can tailor their product to best serve the customers (1 mark). Smaller businesses have more convenient locations, adding place utility to the product they serve (1 mark) and have a more direct relationship with the customers, resulting in a more personalized and friendly service (1 mark).

For evaluation (7 marks)

For a discussion that larger firms can better serve customer needs OR smaller businesses are unable to serve customer needs (up to 7 marks for either of the two approaches or a combination of the two)

The larger businesses, though enjoy a greater market power, face competition from other firms and have to adopt customer friendly and market oriented practices to stay competitive (1 mark). Even a monopoly, in a real situation, faces competition and has to lower price to sell more (1 mark). In an imperfect market characterized by a few large firms, there is interdependence (1 mark) as the decisions of one firm influence others. So, large firms are under pressure to consider the possible reactions of other firms before raising the price or making any move which increases their profits at the expense of consumers' welfare (1 mark). Larger firms can exploit economies of scale resulting in lower average cost; hence, they may charge lower prices than the prices charged by smaller firms (up to 2 marks). Large firms can also allocate more funds to research and development (R&D) and hence provide better quality and more innovative products to customers (up to 2 marks).

8. (J16/43/3a)

In 2014 an American multinational pharmaceutical drug developer and supplier made a bid to take over a Swedish-British multinational drug company, but the board of that company refused to accept the bid for its shares.

(a) Consider whether increasing a company's scale of production will always reduce its costs. [12]

Larger businesses enjoy a lower average cost compared to smaller businesses as they can achieve economies of scale (1 mark). It is the reduction in average cost because of increased scale or size of business (1 mark).

Larger businesses enjoy commercial economies of scale as they are offered bulk buying discounts. They may also obtain loans at lower markups as banks consider lending them safer. Availability of cheaper loans is financial economies of scale. Other economies of scale are managerial, technical, risk bearing and marketing (maximum 4 marks for identifying and explaining the different types of E.O.S with examples; no more than 2 marks if the various types are only identified, but not explained). However, larger businesses can become too large and may experience diseconomies of scale (1 mark). Diseconomies of scale is increase in average cost when the business grows too large (1 mark). Larger businesses often face control and coordination issues (managerial diseconomies), increased wastage, poor coordination, increased chances of theft and pilferage, increased challenges in motivating workers (up to 2 marks). Larger businesses initially experience economies of scale, but beyond a certain stage, diseconomies of scale may creep in and their per unit cost may start to increase (1 mark). A correctly labelled U shaped LRAC clearly showing economies of scale when LRAC is decreasing and diseconomies when LRAC starts to increase (1 mark).

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UNIT 3

Market Structures

A Level
Economics
Topical Paper 4

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Syllabus 2019 –21

ON03/P04/Q4a
ON03/P04/Q4b
ON06/P04/Q4a
ON06/P04/Q4b
ON13/P42/Q2b
MJ10/P41/Q3a
MJ10/P41/Q3b
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UNIT-3 MARKET STRUCTURES

1. (N03/04/4a)

Sony, the Japanese company, is involved in insurance and on-line banking as well as computers, electronics, and computer games.

(a) Explain why a company might wish to produce a diverse range of products rather than specialise. [10]

Benefits of specialization (up to 4 marks)

Firms specialize i.e. focus on producing a narrow range of products to reduce the cost of production. The concentration of firms' scarce resources on producing goods and services, which they can produce better than others, results in more efficient resource allocation and helps achieve larger volumes at lower per unit cost. The production process in such firms is repetitive, enabling them to find better and more cost effective ways of producing goods. The concentration of resources on a limited range of products helps firms establish their repute and goodwill for those products.

Benefits of diversification (up to 6 marks)

However, excessive specialization may make firms more vulnerable to market fluctuations, as decreased demand of their core products may put the survival of such firms in doubt. A diversified portfolio of products enables firms to spread their risks on a broader range of products, as losses in one product range could be compensated by the profits of the other. Products have a finite life, and need to be replaced sooner or later. A diversified portfolio of products will also enable firms to avoid vacuums in their operations, as they will always have growing products to replace declining products. It will also allow firms to exploit marketing economies, as their established repute in one brand will help them launch a new brand in a more cost effective manner. It will be easier to attract customers to a new brand, which has been introduced by a company already well-established in the market. Thus, it is no surprise that companies like Sony operate in diversified markets such as electronics, computers, insurance and online banking.

2. (N03/04/4b)

(b) Sony is a large company that can influence the price of its products. Discuss whether imperfect market structures which allow such companies are beneficial.

[15]

Introduction to the features of perfectly and imperfectly competitive markets (up to 2 marks)

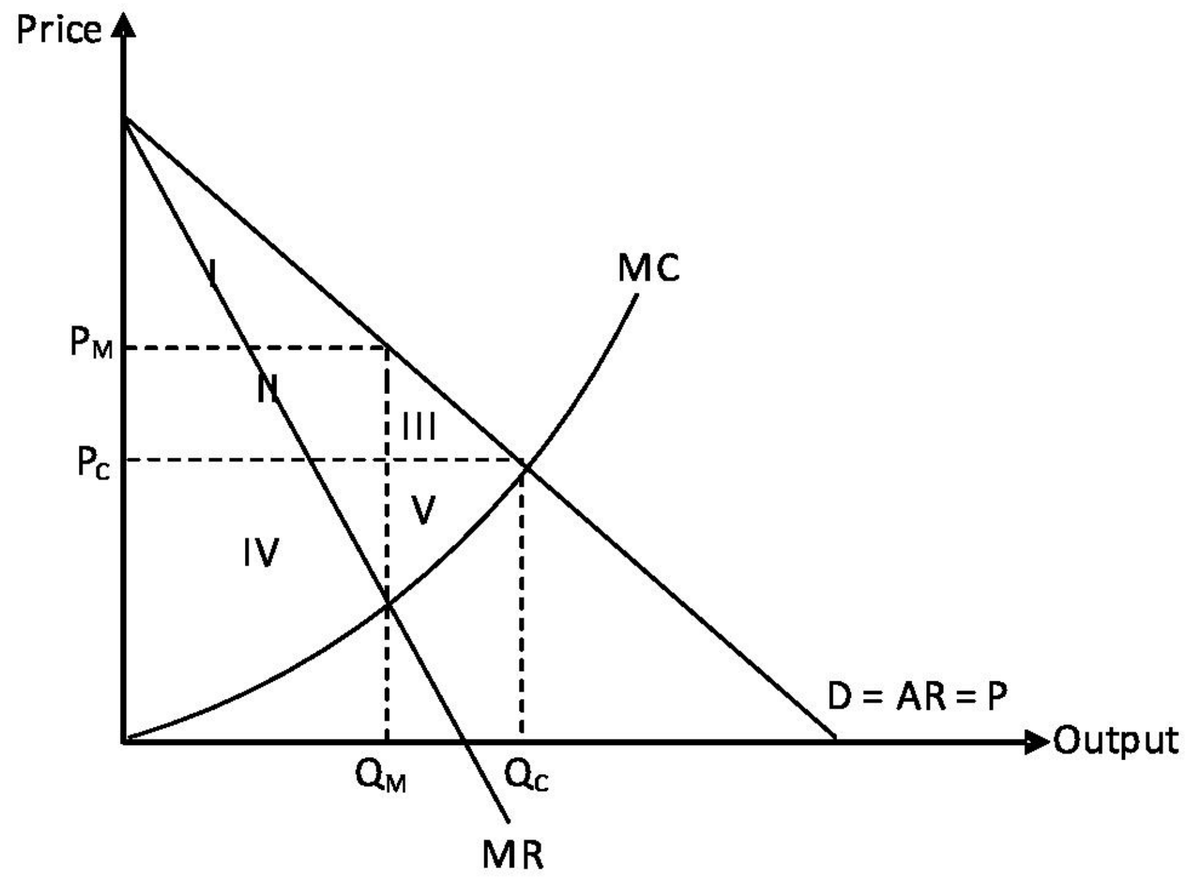
Analysis of the disadvantages of imperfect markets in terms of higher prices, lower quantity, reduced consumer surplus, allocative and productive inefficiency (up to 6 marks)

Analysis of the advantages of imperfect markets in terms of higher profits, economies of scale, research and development, and more variety (up to 4 marks)

A perfectly competitive market has a large number of buyers and sellers, small sizes, homogeneous products, perfect information and low entry and exit barriers. On the other hand,

imperfect markets have a less number of large sized firms, differentiated products, imperfect information and high entry barriers.

The following diagram helps us analyze how perfectly and imperfectly competitive markets differ in their impact on consumers, producers and efficiency.



The equilibrium price and quantity for a perfectly competitive industry are determined by the intersection of downward sloping demand curve and upward rising supply curve at Pc and Qc. Demand curve and Marginal Revenue (MR) diverge in imperfect markets, as, to sell more, the price has to be decreased for all the units. The intersection of MR and MC determines the profit maximizing output for such markets i.e. Q_M. This output is sold at price P_M. Assuming a similar marginal cost curve for both, it is clear that the imperfect market sells too little at too high prices compared to a perfectly competitive setting.

Whereas consumer surplus in an imperfect market is only area I, that for a perfectly competitive industry comprises areas I, II and III. Imperfect markets reduce consumer surplus by selling a lower output at a relatively high price. Producer surplus for imperfect markets is areas II and IV whereas that for perfect competition is IV and V. These markets gain area II by charging a high price but lose area V since fewer units are sold. However, the gain shown by II is greater than the loss, V, so imperfectly competitive markets benefit producers.

The sum of consumer and producer surplus equals area I, II, III, IV and V for the perfectly competitive industry but only I, II and IV for imperfect markets. Area III and V are those components of consumer and producer welfare losses which do not become the gain of any one. Thus III and V show the dead weight loss caused by an imperfect market.

A perfectly competitive firm is allocatively efficient as it charges a price equal to the marginal cost of the last unit and total welfare of society is maximized. Imperfect market, on the other hand, is allocatively inefficient since it charges a price higher than the marginal cost and results in a welfare loss to society i.e. III and V. The temptation to maximize profits forces imperfect markets to restrict output to Q_M where MR equals MC, and harms the society by depriving it of a possible welfare gain.

A perfectly competitive firm must be productively efficient to be able to continue operating in the long run. Productive efficiency requires a firm to produce at minimum possible Average Cost (AC). All perfectly competitive firms make only normal profits i.e. P = AC in the long run, so producing at a cost higher than minimum possible average cost results in losses. However, the ability of an imperfect market to make supernormal profits i.e. charging a price in excess of average cost, provides room for complacency, and such firms, though benefit producers in the form of high profits, reduce productive efficiency.

Imperfect markets may benefit consumers, as the larger sizes of firms in imperfectly competitive markets enables them to exploit economies of scale, reduce per unit cost and charge lower prices from consumers. Imperfect markets, due to higher profits, have more resources to spend on research and development, and are more likely to innovate. As a result, consumers will have access to a greater variety of better quality goods and services.

Conclusion (up to 3 marks)

Imperfectly competitive markets, if not regulated, tend to exploit consumers by charging high prices and restricting output. They may often advertise heavily, making the survival of smaller firms difficult. They may also indulge in other unfair marketing practices to erect entry barriers and deter potential competitors from entering. However, their large size enables them to exploit economies of scale and higher profitability helps to finance research and development. The government should regulate imperfect markets in such a manner that consumers' interests are protected while keeping the incentives for firms to grow and expand.

3. (N06/04/4a)

In 2004 the Chinese government approved a deal with BAT (formerly British American Tobacco) to enable them to become the first foreign manufacturer of cigarettes in China for at least 50 years. BAT said that it would invest $1.5 million in China and that it would take about two years before the factories were running efficiently. It is estimated that China has 300 million smokers and is the world's most important cigarette market.

(a) Cigarette manufacture takes place in an imperfect market. Distinguish between the imperfect markets of monopolistic competition and oligopoly. [13]

For knowledge and understanding of imperfect markets (4 marks)

Imperfect markets have fewer sellers (1 mark), larger size of firms (1 mark), imperfect consumers knowledge (1 mark), high entry barriers (1 mark) and differentiated product (1 mark).

For application i.e. a comparison of monopolistic competition and oligopoly (up to 9 marks)

There is a larger number of small sized firms in a monopolistic completion, whereas oligopoly is dominated by a few large sized firms that have a high concentration ratio / market share (up to 2 marks).

Products are differentiated in terms of branding, packaging, quality and other features in a monopolistic competition, whereas products could be differentiated (for example automobile market) or homogeneous in an oligopoly (oil industry) (up to 2 marks).

The demand curve faced by monopolistically competitive firms is downward sloping, indicating that such firms can retain some of their customers even after raising the price as their products are differentiated, whereas the demand curve in an oligopoly is uncertain as the outcome of a

firm's decision to change the price depends on the reactions of competitors, which are uncertain and cannot be predicted accurately (up to 2 marks).

Entry into a monopolistic competition is easy as firms are usually small, but there are high entry barriers in an oligopoly (1 mark).

Firms in a monopolistic competition act independent of each other and the actions of one have little or no influence on others, whereas firms in an oligopoly are strategically interdependent and the actions of one firm have considerable influence on others (up to 2 marks).

Correctly labelled diagrams such as kinked demand curve for oligopoly or a downward sloping demand curve which is higher than MR for monopolistic competition may be given up to 2 marks.

4. (N06/04/4b)

(b) Discuss how BAT's investment might be likely to affect its profits in the short and long run. [12]

Evaluation of effects of investment in the short run (up to 6 marks)

Increased investment will increase the fixed cost of the business (1 mark).

The total cost, and hence, the average cost, will increase (1 mark). BAT is entering a new market, so raising the price is not easy (1 mark). The sales revenues will also be low as the number of customers will be limited initially (1 mark). The firm will not be able to exploit economies of scale as it will be selling lower quantity and producing in the falling portion of long run average cost (up to 2 marks). Lower revenues and higher cost will result in lower profits/losses in the short run (1 mark).

Evaluation of effects of investment in the long run (up to 6 marks)

In the long run, the market will become more aware of the presence of BAT, which will increase customer base, allowing the firm to raise the price, hence higher sales revenues (up to 2 marks). The firm will be able to exploit economies of scale, as a larger volume will be produced in the long run, resulting in lower per unit cost (up to 2 marks). The factories will be run more efficiently in the long run and there will be lesser wastage of resources, resulting in lower costs (up to 2 marks). Higher sales revenues and lower costs result in higher profits in the long run (1 mark).

For evaluation (up to 4 marks)

Investment by BAT is likely to result in high profits for the firm as they are the first foreign firm entering the market, so a huge potential exists for them (1 mark).

The Chinese market is the largest in the world, so profits are likely to be high (1 mark).

Entry barriers are high in this market, as new firms need the government's permission to set up their business in China (1 mark).

However, they will take a couple of years in making profits, as factories will take some time before they are run efficiently (1 mark) and the firm will take some time in creating awareness for its product (1 mark).

5. (N13/42/2b)

(b) Economic texts examine market equilibrium. Discuss whether it is the consumer or the producer who determines the equilibrium market price and whether consumers have the same power in all types of market structure. [13]

Market equilibrium and how equilibrium price is determined (up to 2 marks)

Market equilibrium is where demand equals supply. Equilibrium price is determined by the intersection of demand and supply curves. There is excess supply if the price is higher than the equilibrium price and excess demand at prices below equilibrium. Excess supply pushes prices downwards and excess demand increases prices. At the equilibrium price, also known as the market clearing price, there is neither a shortage nor a surplus of goods.

The role of consumers and producers in the determination of equilibrium price (up to 2 marks)

Consumers' choices are reflected by a downward sloping demand curve, the height of which shows Marginal Utility (MU). Producers' choices are reflected by an upward rising supply curve, the height of which shows Marginal Cost (MC).

Demand and supply curves represent choices, decisions and preferences of a large number of buyers and sellers who make their decisions individually and independent of each other. In a perfect market, an individual buyer or seller is not in a position to influence price.

Varying powers of consumers and producers in different situations (up to 4 marks)

In situations where the product is unique, sellers are few, information is asymmetrical and entry barriers are high, producers are likely to have a greater say in the determination of price. However, the use of technology to improve information and steps that reduce entry barriers help restore the balance of power in favour of the consumers.

Powers of consumers in different market structures (up to 5 marks)

Consumers have greater power in a perfectly competitive market where the number of firms is large, the size of the firms is small, the product is homogeneous and entry barriers are low. As perfect substitutes are available in such a situation, the price elasticity of demand is infinite and the power of consumers is maximum. However, an individual consumer has no influence on determining the price.

Consumers' powers reduce in monopolistic completion as products are differentiated and consumers' choices are influenced by attractive packaging and aggressive advertising.

In oligopoly, the market power of consumers reduces significantly, as a few large firms are likely to enter into a price fixing agreements, which may result in consumer exploitation.

In monopoly, the power of the seller is considerable, but it still faces a trade off, as rising the price will result in lower quantity demanded. Thus, consumer power is not absolutely zero even in the case of monopoly.

6. (J10/41/3a)

In 2007 the cost of a single ticket on London trains bought at the time of travel was £4. The same ticket bought in advance was £2.50 if used up to 19.00 hrs and £2 after 19.00 hrs. Children could travel free at any time, and those over 60 could travel free after 09.00 hrs.

(a) Explain what is meant by price discrimination and analyse what evidence there is of price discrimination in the above statement. [12]

For knowledge and understanding of price discrimination (up to 6 marks)

Price discrimination is a process of charging different prices for reasons unrelated to production costs (1 mark)

It is a process of equating marginal revenues of the last units sold in different segments or for different customers (1 mark)

Price discrimination is feasible when resale is impossible (1 mark), the seller has some monopoly power (1 mark) and different buyers /market segments have different elasticities of demand (1 mark)

A higher price is to be charged from customers with lower elasticity of demand and a lower price from customers who are more sensitive to changes in price (1 mark)

For application (up to 6 marks)

The above example is of price discrimination, as the ticket price is different for different customers for reasons unrelated to cost (1 mark)

Kids have a higher elasticity of demand for train travel as their needs to travel are not very important (1 mark), so a lower price for them is an example of price discrimination (1 mark)

Older people are less mobile and their elasticity of demand to rail travel is also high (1 mark), so a relatively lower price is price discrimination (1 mark)

Price elasticity of demand is low for travelling in peak hours, that is before 1900 hours (1 mark), so a higher price is price discrimination (1 mark)

Travelers making advanced reservations usually have more options, so the price elasticity of demand is high (1 mark), and a lower price from such customers is price discrimination.

7. (J10/41/3b)

(b) Discuss how the output and pricing policy adopted by a firm might differ depending on the market structure in which it operates. [13]

Analysis where different market structures have an effect on pricing and output decisions (up to 9 marks)

In a perfect competition, firms are only price takers (1 mark) as they have to accept the price determined by market forces beyond their control (1 mark)

In a monopolistic competition, firms have little control over price if they can successfully differentiate their product (1 mark)

The higher the product differentiation, the lower the price elasticity of demand and greater will be the control over price (1 mark)

In an oligopoly, firms have strategic interdependence, which discourages them from competing on price (1 mark) and they prefer to follow a going rate pricing technique i.e. charging the market price (1 mark) to avoid a price war

Firms, instead of competing on price (1 mark), choose to indulge in non price competition i.e. try to win customers through better promotion, packaging and strong branding (1 mark)

They also form price fixing agreements (1 mark)

Some firms may intentionally lower prices to dominate the market (1 mark) or to keep competitors away from the industry (1 mark)

By charging lower prices, they impose entry barriers (1 mark)

In a monopoly, the firm has considerable control over price and can raise the price by restricting output (1 mark), so monopoly is a price maker (1 mark)

For evaluation (up to 4 marks)

In all market structures, pricing decisions may differ, but output is decided in the same way i.e. all profit maximizing firms produce where MC equals MR (up to 2 marks)

Perfect competition and oligopoly are two different market structures, but both decide about price in the same manner (1 mark) i.e. charging the price that is prevailing in the market (1 mark)

8. (N14/42/3)

Discuss the similarities and differences between a firm's likely price and output policy in perfect competition and oligopoly. [25]

For knowledge and understanding of characteristics of both market structures (up to 5 marks)

For the characteristics of perfect competition (up to 3 marks)

Large number of small sized firms (1 mark)

Homogeneous product (1 mark)

Low entry and exit barriers (1 mark)

Perfect knowledge of consumers and producers (1 mark)

For the characteristics of oligopoly (up to 3 marks)

Few large sized firms dominate the market (1 mark)

High concentration ratio (1 mark)

Entry is difficult (1 mark)

There is strategic interdependence (1 mark)

For application of how pricing and output decisions are made in perfect competition and oligopoly (up to 5 marks)

For the correctly labelled diagram (up to 2 marks)

Explanation that output is determined by the intersection of MR and MC, and that firms are price takers as they accept the price determined by the intersection of demand and supply curves (1 mark)

Explanation of pricing and output decision of a firm in oligopoly (up to 2 marks)

Pricing and output decisions in oligopoly are made in uncertainty (1 mark) as the actions of one firm can influence others and vice versa (1 mark), so the outcome of a decision to change the price depends on the reactions of competitors (1 mark), which are not easily predictable (1 mark)

For analysis of the similarities and differences in the pricing and output decisions of firms in the two types of market structures (up to 11 marks)

For analysis of the similarities in the pricing and output decisions of firms in the two types of market structures (up to 6 marks)

Firms in both markets are price takers (1 mark) and avoid competing on price (1 mark) They sell the output at the price prevailing in the market OR both firms use a going rate pricing technique (1 mark)

Firms in both market structures may be selling a homogeneous product, for example oil, which is sold in pure oligopoly (1 mark)

Firms in both market structures aim to maximize profits (1 mark) and produce where MC equals MR (1 mark)

Both firms aim to be efficient to produce goods at the lowest possible cost (1 mark)

For analysis of the differences in the pricing and output decisions of firms in the two types of market structures (up to 6 marks)

Firms are small in size and large in number in perfect competition, whereas in oligopoly, there are few large sized firms that dominate the market (up to 2 marks)

Actions of one firm cannot influence others in perfect competition, so all firms act independently, whereas in oligopoly, the actions of one firm influence others and vice versa, so there is strategic interdependence (up to 2 marks)

The demand curve in perfect competition is straight horizontal, showing that infinite quantities can be sold at the prevailing market price, whereas the demand curve in oligopoly is missing / a kinked demand curve (up to 2 marks)

Firms in oligopoly tend to make price fixing agreements / form collusive oligopoly / cartels to overcome the uncertainty caused by strategic interdependence, but these are not possible in perfect competition (up to 2 marks)

For evaluation (up to 4 marks)

It is hard to find out an example of a perfectly competitive firm in the real world (1 mark), but we still study it as it is the only market structure that enables us to examine pricing and output decisions with the help of demand and supply curves (1 mark). It also allows us to examine to what extent markets in the real world deviate from the model of perfect competition (1 mark). Most of the real world markets are oligopoly (1 mark).

9. (J16/43/3b)

In 2014 an American multinational pharmaceutical drug developer and supplier made a bid to take over a Swedish-British multinational drug company, but the board of that company refused to accept the bid for its shares.

(b) Analyse what is meant by a contestable market and consider whether companies that supply drugs are likely to be in a contestable market. [13]

Knowledge and Understanding of Contestable Markets (up to 4 marks)

Contestable markets are characterized by low entry barriers (1 mark). A perfectly contestable market is one where the cost of entering into a market is zero. Though there might not be a perfectly contestable market in real world, all markets in real world are contestable to an extent. A market may be less competitive if the number of existing firms / competitors is low, but can be highly contestable at the same time if entry barriers are low i.e. potential competition is high (1 mark).

A firm is highly contestable when it is producing a product using simple, easily available technology and information about its product and product process is easily available. Lack of government intervention such as licensing, small size of existing firms, easy availability of production factors, low spending of existing firms on advertising and marketing allow easy entry of new firms resulting in a more contestable market. (up to 2 marks)

Analysis of how contestable markets operate (up to 4 marks)

Firms in highly contestable markets usually act like firms which operate in highly competitive markets and charge lower prices and accept low profits to keep potential competitors disinterested

(1 mark). These firms give up the objective of short term profit maximization and aim to maximize long term market share (1 mark) by offering a greater variety of better quality goods so that no gap is left for a potential competitor to exploit (1 mark). Since these firms usually charge low prices, they cannot afford to be productively inefficient as this will further reduce their already slim profit margins (1 mark).

Analysis whether companies that supply drugs are likely to be in a contestable market (up to 5 marks)

The companies that supply drugs spend huge amount of money on Research & Development (R&D) in order to develop more effective medicines (1 mark). The ingredients and techniques to develop these medicines will be known to everyone soon after they are launched into the market. In case of low entry barriers, many other firms will imitate the technology and start selling the same product at a low price eroding the incentive for firms to spend huge sum of money on R&D (1 mark). Thus to safeguard the interests of such firms, government often restrict the competition into such markets by issuing "patents" (1 mark). Patents are exclusive right to manufacture a product for a limited period of time, to keep competitors away and to encourage R&D. Thus, most of the drug manufacturers operate in less contestable markets (1 mark), however, once the patents expire, market becomes contestable and new firms can enter (1 mark).

10. (N16/41/2a)

(a) Assess the differences and the similarities in characteristics, pricing and output between perfect competition and monopolistic competition. [12]

Analysis of similarities between perfect and monopolistically competitive firms (up to 6 marks)

Both markets have a larger number of small sized firms (1 mark).

Entry and exit is easy in both markets (1 mark).

Both firms try to maximize profits and produce output where rising marginal cost equals marginal revenue (1 mark).

They both try to be efficient by controlling cost (1 mark).

Both can only make normal profits in the long run as entry is easy in both the markets (1 mark).

Analysis of the differences between perfect and monopolistically competitive firms (up to 6 marks)

The fundamental difference between the two market structures is nature of the product. Products are assumed to be homogeneous whereas they are differentiated on the basis of branding, packaging, quality and marketing etc. in monopolistically competitive firms (up to 2 marks).

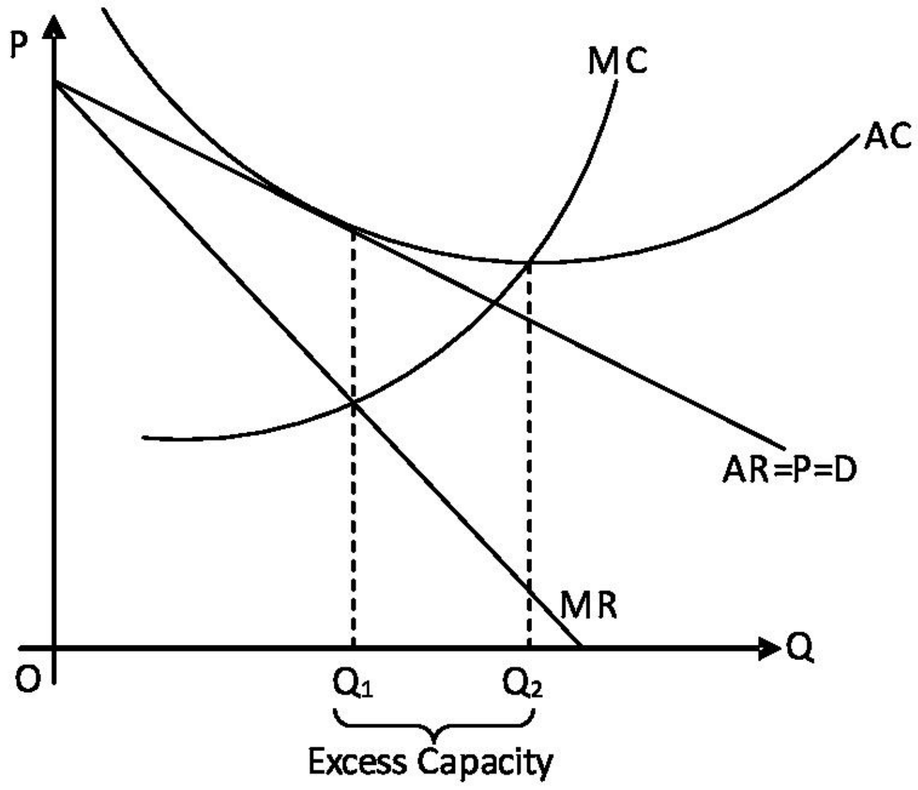
A perfectly competitive firm is a price taker and cannot sell even a single unit if it attempts to charge a price higher than the market price. However, a monopolistic firm can retain some of its customers even if it raises the price (1 mark).

Its ability to retain customers at a higher price depends upon the degree / success of product differentiation (1 mark).

Demand curve of a perfectly competitive firm is straight horizontal whereas it is downward sloping for monopolistically competitive firms (1 mark).

Sale price and marginal revenue are the same in perfect completion as more can be sold at the same price. Price and MR diverge in monopolistic competitive firms as such firms can attract more customers by lowering prices (1 mark).

Unlike a perfectly competitive firm, a profit maximizing monopolistically competitive firm will certainly leave excess capacity in the long run. The price equals average cost as only normal profits can be made in the long run but exceeds marginal cost. Marginal revenue equals marginal cost and marginal revenue is below sale price, so at the profit maximizing output, equating average cost and marginal cost is impossible. Thus, a monopolistically competitive firm cannot produce where average cost is the lowest (a point where marginal cost equals average cost).



11. (N16/41/2b)

(b) Consider whether it is true that prices are always higher and output always lower under monopoly conditions than they are under perfectly competitive conditions. [13]

Price and output determination in monopoly (up to 4 marks)

Monopoly, being a single producer, can control price or the output but cannot control both simultaneously. The demand curve faced by monopoly is downward sloping which exhibits a trade-off between higher prices or higher quantity sold. A monopoly can sell more only if it reduces the price (up to 2 marks).

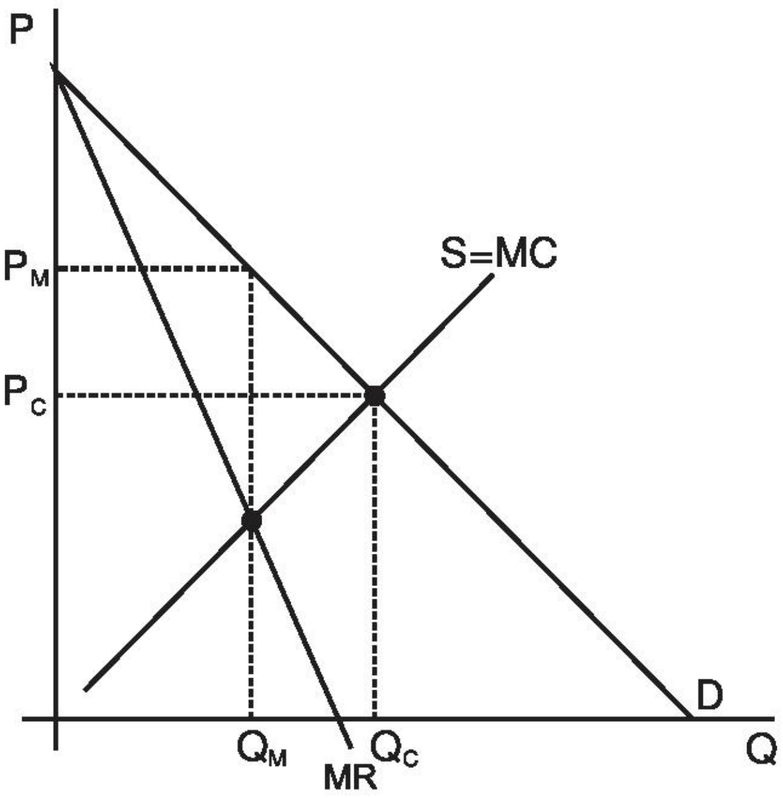
Sale price and marginal revenue diverge, as to sell more monopoly has to reduce prices on all units. A profit maximizing monopoly chooses to produce output where marginal cost equals marginal revenue. Monopoly sells this output at the highest possible price given by the height of the demand curve (up to 2 marks).

Monopoly produces lower output and charges a higher price than a perfect competitive market (up to 5 marks).

A perfectly competitive firm produces where demand curve interests supply curve (Q_C in the diagram). This output is higher than the output produced by monopoly. Monopoly produces a lower output as its output is determined by the intersection of MR and MC. Since MR lies below

demand curve, it intersects MC at a lower output (Q_M in the diagram). Monopoly charges a higher price (P_M) than a perfectly competitive market (P_C). (Up to 2 marks for the explanation)

(Up to 3 marks for the following diagram)



One mark for accurate labelling

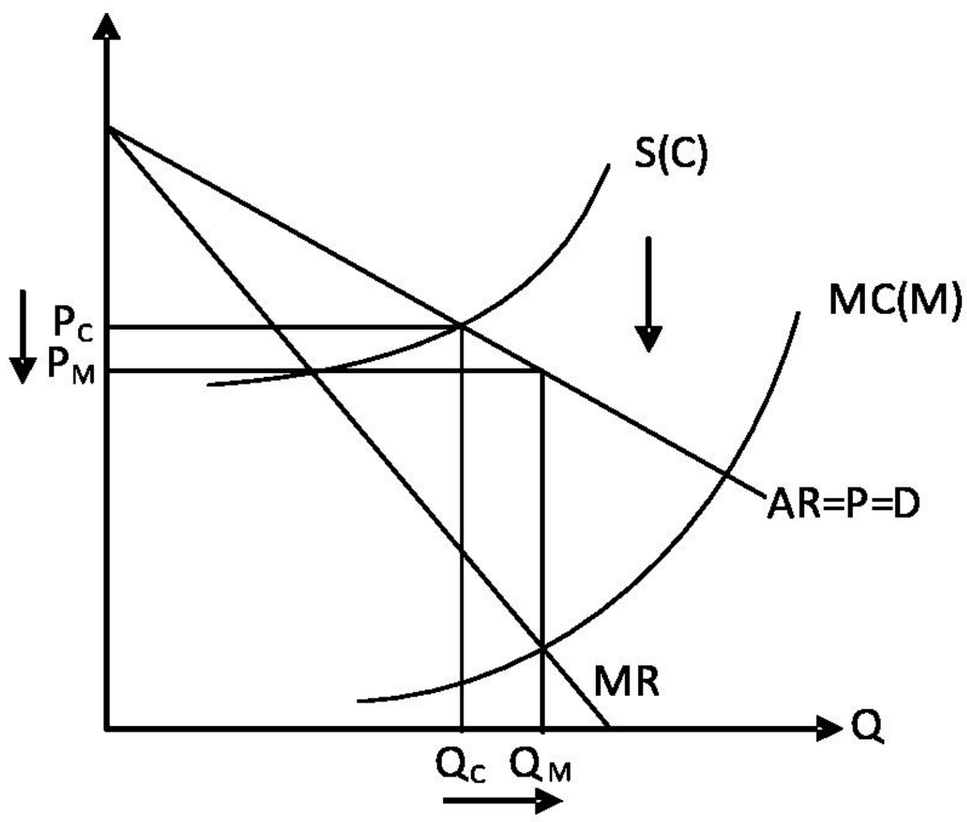
One mark for the comparison between the output of both markets

One mark for the comparison between the price of both markets

Monopoly may produce more than a perfectly competitive market (up to 4 marks)

(2 marks each for the explanation and for the diagram)

Unlike perfect competition where all the firms are very small, a monopoly is a large sized business and enjoys economics of scale. The lower average cost because of the larger size of monopoly may shift the marginal cost downwards and in a case where economies of scale are significant, a monopoly may produce more than a perfectly competitive firm and charge a lower price as shown in the following diagram:



The higher MC curve is of a perfectly competitive market (Sc) which sells output (Qc) at price (Pc). The lower marginal cost curve MC (MCm) is of monopoly which shows monopoly produces more (Q_M) and sells it a lower price (P_M) than the price charged by perfectly competitive market.

Monopoly can also afford to invest in research and development which can help them find more cost effective production methods enabling monopoly to sell more than a perfectly competitive market.

(Sample Ex GCE Econ H060)

Abuse of monopoly power can lead to market failure and is against public interest.

Evaluate, using an appropriate diagram(s), the effectiveness of government intervention in controlling monopoly abuse and protecting consumer interest. [20]

Answer

Level 4 (15-20 marks)

Good knowledge and understanding of government intervention in a monopoly.

Strong analysis of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers. A relevant and accurately labelled diagram is provided and is linked to the analysis.

Strong evaluation of the effectiveness of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers.

There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.

Level 3 (11-15 marks)

Good knowledge and understanding of government intervention in a monopoly.

Good analysis of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers. A relevant diagram is provided and is linked to the analysis.

Good evaluation of the effectiveness of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers.

There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence.

Level 2 (5-10 marks)

Reasonable knowledge and understanding of government intervention in a monopoly.

Reasonable analysis of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers. A relevant diagram is provided, which is less than perfect.

Reasonable evaluation of the effectiveness of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers, but without a judgement being made.

The information has some relevance and is presented with limited structure. The information is supported by limited evidence.

Level 1 (1-5 marks)

Limited knowledge and understanding of government intervention to influence a monopoly.

Limited or no analysis of government intervention as a method for controlling monopoly abuse and protecting the interests of consumers.

Limited or no evaluation.

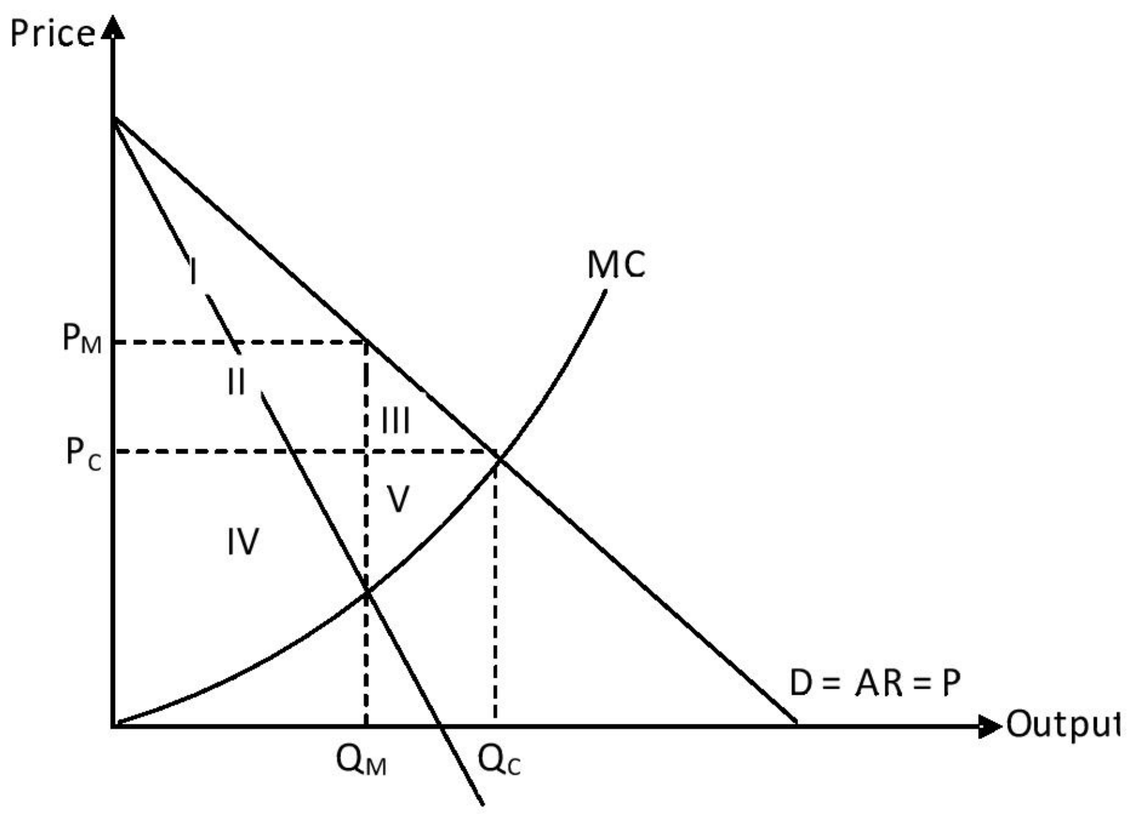
The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.

0 marks – no response or no response worthy of credit

Guidance

At Level 4, candidates may offer an articulate conclusion whether state intervention – in the form of taxes, subsidies and regulations – helps control monopoly abuse by lowering prices and/or forcing increased output, closer to the socially optimal level.

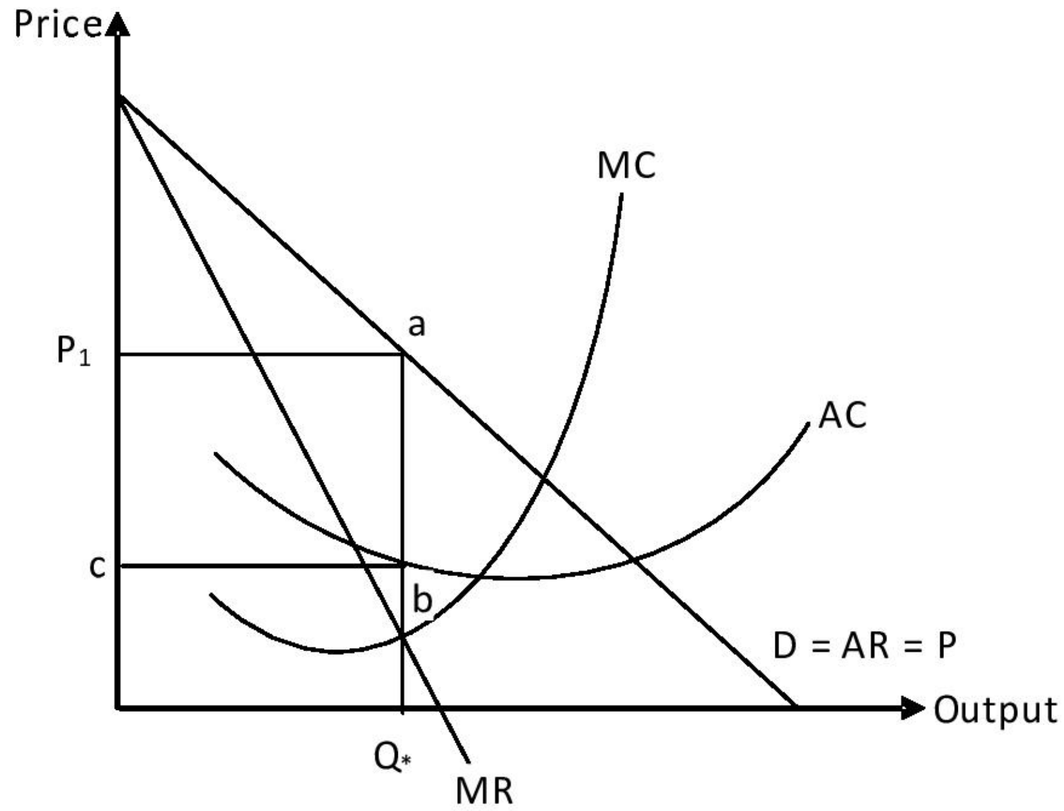
Candidates can clearly illustrate monopoly abuse in a diagram with the help of demand, MR and MC curves, showing how a monopolist in comparison with a perfectly competitive firm sells too little ($Q_M < Q_C$) at too high prices ($P_M > P_C$).



This includes a recognition of the fact that the profit maximizing output of MC = MR in a monopoly falls short of the allocatively efficient output where Sale Price = MC. Candidates identifying the triangle (III & V) showing welfare loss due to allocative inefficiency will deserve credit. Since price and MR diverge, it is not possible for a profit maximizing monopolist to be allocatively efficient as equating MR and MC certainly results in a price higher than MC.

Candidates may illustrate this further by showing reduced consumer surplus under monopolies (consumer surplus decreases from I, II & III to I). They may explain how producers gain by charging higher prices (II) but lose due to lower quantity sold (V). However, the gain in producers' surplus (as II exceeds V) is outweighed by a loss in consumer surplus (II & III), resulting in a net welfare loss to society.

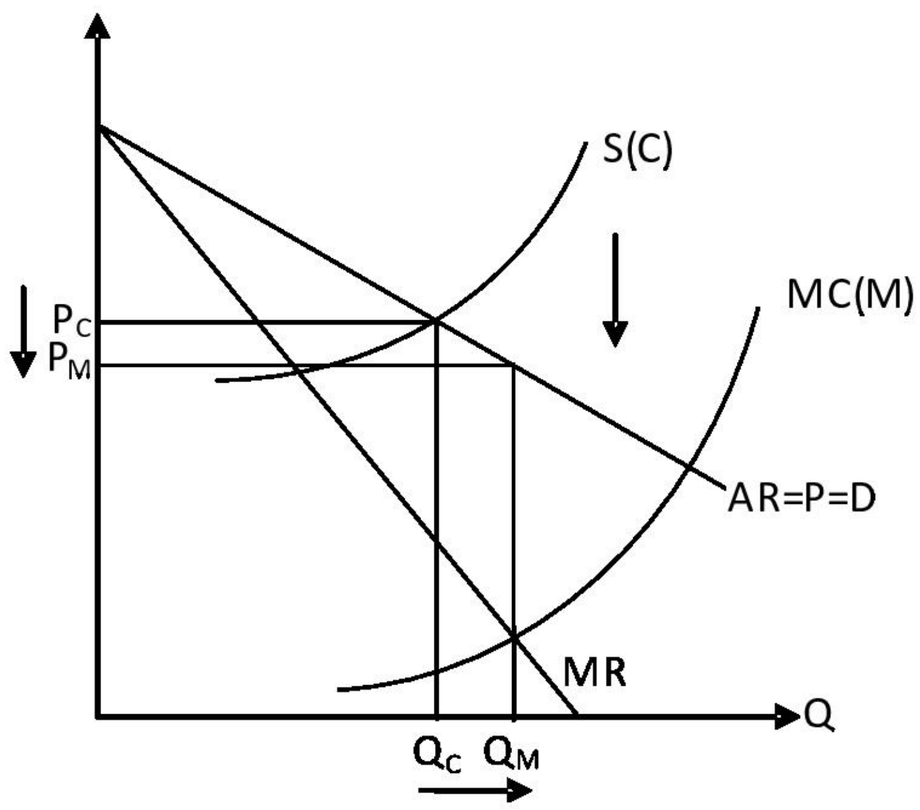
High entry barriers allowing monopolies super normal profits (P_1abc) both in the short and long run may be mentioned with the help of the following diagram.



Candidates can highlight monopolies' productive inefficiency in describing how super normal profits de-incentivize them to be cost efficient. Such profits can escalate entry barriers, discouraging competition and allowing monopolies to reap such profits over a sustained period of time.

Monopolies can also reduce consumers' welfare by indulging in collusive behavior, joining hands with other dominant firms to either fix a higher sale price, or a lower price while bidding for a contract.

Candidates can also remark on the benefits of monopolies in their evaluation. These include economies of scale (causing a downward shift in MC) allowing them an increase in output and lower price, sometimes even below the price under perfect completion ($P_M < P_C$).



Other benefits of a monopoly business may include investment in research and development, continued innovation given the monopoly's ability to overcome losses in developing and marking new products through cross-subsidization of products, international competitiveness earning precious export revenues, and increased employment opportunities.

Candidates are expected to examine the role of taxes, subsidies and state regulations and argue the effectiveness of such tools in addressing monopoly abuse. They may compare the imposition

of a lump sum tax leading to decreased profits and no change in output against a per unit tax which reduces output and furthers it from the socially optimal level. Candidates may also discuss a per unit subsidy, encouraging the monopoly to increase production and bring it closer to the socially optimal level.

A government's legislative powers to control monopolies may also be discussed, as well as action and investigation by MMC and OFT to curb anti-competition behavior.

Arguments against state intervention include difficulty in determining the exact amount of taxes to be imposed or counter-productive state intervention if higher taxes cause a possible drift, taking it further away from the socially optimal level of output.

An identification that monopoly is a large sized business with significant market share exceeding 40%. (Accept responses which define monopoly as a firm with a market share exceeding 25%)

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UNIT 4

Economic Efficiency

A Level
Economics
Topical Paper 4

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Syllabus 2019 –21

ON02/P04/Q3a
ON02/P04/Q3b
MJ14/P42/Q3
MJ02/P04/Q7a
MJ02/P04/Q7b
ON05/P04/Q2a
ON05/P04/Q2b
MJ12/P41/Q7
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UNIT-4 ECONOMIC EFFICIENCY

1. (N02/4/3a)

(a) Explain what is meant by productive and allocative efficiency. [10]

Productive efficiency is achieved when a firm / country produces maximum output with available resources (1 mark) i.e. produces at its Production Possibility Curve (1 mark). Production of a commodity can be increased only if the production of the other is decreased (1 mark). A firm is productively efficient when it minimizes the average cost for its output (1 mark). A correctly labeled PPC (showing full utilization of resources) or Average Cost Curve (showing that the firm is producing at the lowest average cost) (1 mark). Firms making low / normal profits are more likely to be productively efficient, as inefficiency results in losses and puts survival of firms in doubt (1 mark). On the other hand, firms making supernormal profits tend to be productively inefficient (1 mark).

Resource allocation is allocatively efficient when the welfare of the society is maximized (1 mark) and that is where Marginal Social Benefit (MSB) equals Marginal Social Cost (MSC) of the last unit (1 mark). A correctly labeled diagram, where the intersection of a downward sloping MSB and upward rising MSC determines the socially optimal level of output (1 mark). A firm is allocatively efficient when it charges a price (the value the consumer attaches to the product) equal to the Marginal Cost (MC) of the last unit (1 mark). A resource allocation is efficient when it is impossible to make someone better off without making someone else worse off i.e. Pareto Optimality (1 mark). A perfectly competitive firm is productively efficient (assuming no externalities), as its sale price equals marginal revenue. Thus, the profit maximizing output of a perfectly competitive firm (where MR = MC) is allocatively efficient, as P = MR = MC (1 mark). Imperfectly competitive firms are allocatively inefficient, as sale price and MR diverge, and equating MR and MC to maximize profits would result in a divergence between price and MC (1 mark).

[Note: Maximum 6 marks for discussing either allocative or productive efficiency, and maximum 10 marks for discussing both]

2. (N02/4/3b)

(b) 'A firm should be encouraged to maximize profits because this makes it efficient.' Discuss whether this argument is true for a firm operating in an imperfect market.

[15]

Analysis of the effects of profits over productive and allocative efficiency (up to 12 marks)

Analysis of the effects of profits over productive efficiency (up to 7 marks)

Profits, i.e. the difference between revenue and costs, give incentives to businesses to work to raise revenues and/or minimize costs, thus the objective of higher profits is likely to lead to lower cost and productive efficiency. The firms put efforts to combine inputs in the least cost methods to ensure that they produce at lowest possible cost and are productively efficient. They train employees, procure quality raw materials from best possible sources, design production outlay to minimize wastage and maximize productivity. All these steps help reduce cost and achieve productive efficiency.

However, higher profits reduce the pressure on firms to be efficient, e.g. a monopoly, which can make supernormal profits even in the long run, tends to be productively inefficient. On the other hand, perfectly and monopolistically competitive firms make only normal profits in the long run i.e. price equals average cost, leaving no margin of complacency for these firms. In order to survive, these firms must be productively efficient. Thus, lower profits raise the likelihood of productive efficiency.

Higher profits and allocative efficiency (up to 7 marks)

To maximize profits, firms need to produce an output where MR equals MC. A perfectly competitive firm can sell more at the same price, so the sale price equals MR. Thus, a perfectly competitive profit maximizing firm (which equates MR and MC) is allocatively efficient, as the sale price equals MR and also equals MC, which is a condition of allocative efficiency.

However, for a monopoly (and a monopolistically competitive firm), the sale price exceeds MR as it has to decrease price on ALL the units to sell more. A profit maximizing monopoly (and a monopolistically competitive firm) cannot be allocatively efficient, as equating MR and MC would mean that the sale price exceeds MR as well as MC. In order to maximize profits, the monopoly restricts output at a point where the benefit of the last unit produced (height of the demand curve) exceeds the cost incurred by society to produce it (height of the supply curve). From the point of view of the society, output should be increased beyond this point to increase welfare; however, monopoly ceases to produce where MR equals MC.

Firms aiming for higher profits tend to ignore external cost, as they do not have to pay for them, resulting in overproduction of goods and services, which creates negative externalities. Similarly, firms ignore external benefits, as they cannot charge a price for them and make profits, so under-produce goods and services, generating positive externalities. Profit-maximizing firms also tend to be allocatively inefficient while producing merit and demerit goods. Merit goods are under-produced and demerit goods are over-produced because of information failure i.e. the economic agents are unable to fully realize the true benefits and costs associated with the production and consumption of these goods.

Profit maximizing firms also fail to allocate resources to produce public goods, as, because of the feature of non-excludability, it is impossible to charge a price and make a profit.

Conclusion (up to 3 marks)

Market forces are likely to allocate resources efficiently, as a free market economy provides profit incentives, and firms seeking to make high profits not only try to reduce costs but also ensure quality to prevent customers from switching to competitors. However, the government must regulate the private sector firms through taxes, subsidies, legislation and public campaigns to ensure that these firms produce goods and services in optimal quantities. The government should also consider directly providing goods and services, such as merit and public goods, which are not provided adequately by profit-maximizing firms. Finding a right mixture of allowing market forces to allocate resources and government regulations is a challenge, as government interference in resource allocation also brings a variety of inefficiencies.

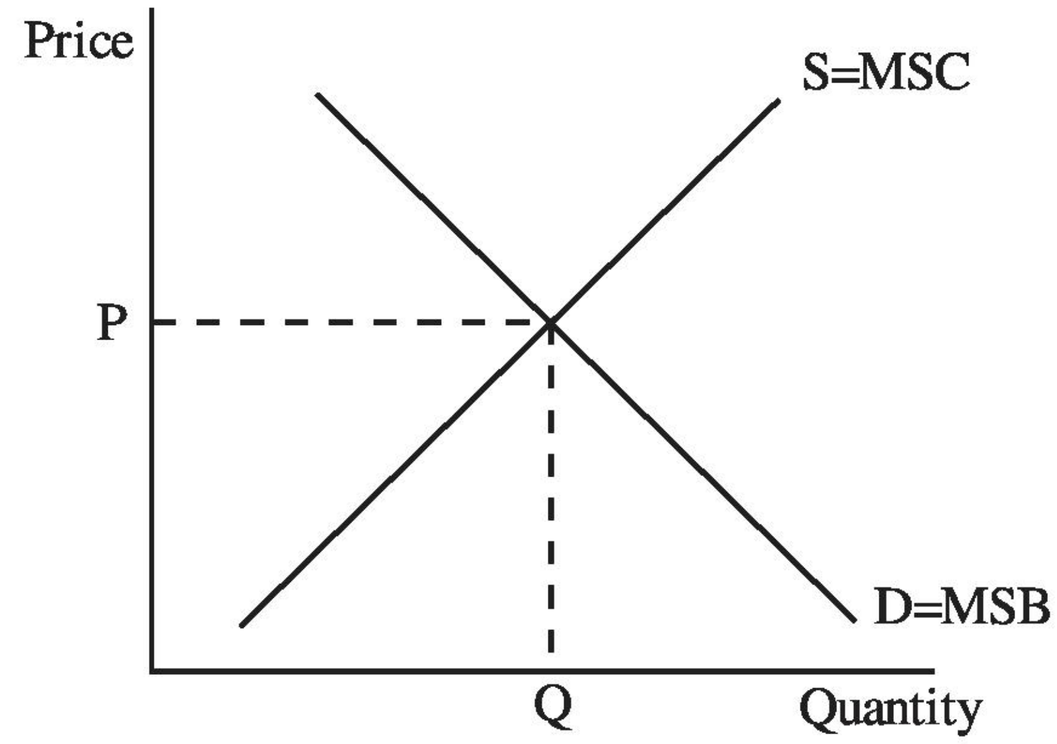
3. (J14/42/3)

'The profitability of firms is a measure of their efficiency. The higher the profit, the greater the efficiency. High profits should, therefore, be encouraged.'

Do you support this argument? **[25]**

Meaning of efficiency (up to 6 marks)

Economic efficiency is of two types, productive and allocative efficiency (1 mark). Resource allocation is allocatively efficient when the welfare of the society is maximized (1 mark) and that is where Marginal Social Benefit (MSB) equals Marginal Social Cost (MSC) of the last unit (1 mark). A correctly labeled diagram, where the intersection of a downward sloping MSB and upward rising MSC determines the socially optimal level of output (1 mark).



A firm is allocatively efficient when it charges a price (the value the consumer attaches to the product) equal to the Marginal Cost (MC) of the last unit (1 mark). A resource allocation is efficient when it is impossible to make someone better off without making someone else worse off i.e. Pareto Optimality (1 mark).

Productive efficiency is achieved when a firm / country produces maximum output with available resources (1 mark) i.e. produces at its Production Possibility Curve (1 mark). Production of a commodity can be increased only if the production of the other is decreased (1 mark). A firm is productively efficient when it minimizes the average cost for its output (1 mark).

Maximum 6 marks

Analysis of the effects of profits over efficiency (up to 15 marks)

Higher profits and productive efficiency (up to 6 marks)

Profits, i.e. the difference between revenue and costs, give incentives to businesses to work to raise revenues and/or minimize costs, thus the objective of higher profits is likely to lead to lower cost and productive efficiency. The firms put efforts to combine inputs in the least cost methods to ensure that they produce at lowest possible cost and are productively efficient. They train employees, procure quality raw materials from best possible sources, design production outlay to minimize wastage and maximize productivity. All these steps help reduce cost and achieve productive efficiency.

However, higher profits reduce the pressure on firms to be efficient, e.g. a monopoly, which can make supernormal profits even in the long run, tends to be productively inefficient. On the other hand, perfectly and monopolistically competitive firms make only normal profits in the long run i.e. price equals average cost, leaving no margin of complacency for these firms. In order to survive, these firms must be productively efficient. Thus, lower profits raise the likelihood of productive efficiency.

Higher profits and allocative efficiency (up to 10 marks)

To maximize profits, firms need to produce an output where MR equals MC. A perfectly competitive firm can sell more at the same price, so the sale price equals MR. Thus, a perfectly competitive profit maximizing firm (which equates MR and MC) is allocatively efficient, as the sale price equals MR and also equals MC, which is a condition of allocative efficiency.

However, for a monopoly (and a monopolistically competitive firm), the sale price exceeds MR as it has to decrease price on ALL the units to sell more. A profit maximizing monopoly (and a monopolistically competitive firm) cannot be allocatively efficient, as equating MR and MC would mean that the sale price exceeds MR as well as MC. In order to maximize profits, the monopoly restricts output at a point where the benefit of the last unit produced (height of the demand curve) exceeds the cost incurred by society to produce it (height of the supply curve). From the point of view of the society, output should be increased beyond this point to increase welfare; however, monopoly ceases to produce where MR equals MC.

Firms aiming for higher profits tend to ignore external cost, as they do not have to pay for them, resulting in overproduction of goods and services, which creates negative externalities. Similarly, firms ignore external benefits, as they cannot charge a price for them and make profits, so under-produce goods and services, generating positive externalities. Profit-maximizing firms also tend to be allocatively inefficient while producing merit and demerit goods. Merit goods are under-produced and demerit goods are over-produced because of information failure i.e. the economic agents are unable to fully realize the true benefits and costs associated with the production and consumption of these goods.

Profit maximizing firms also fail to allocate resources to produce public goods, as, because of the feature of non-excludability, it is impossible to charge a price and make a profit.

Conclusion (up to 4 marks)

Market forces are likely to allocate resources efficiently, as a free market economy provides profit incentives, and firms seeking to make high profits not only try to reduce costs but also ensure quality to prevent customers from switching to competitors. However, the government must regulate the private sector firms through taxes, subsidies, legislation and public campaigns to ensure that these firms produce goods and services in optimal quantities. The government should also consider directly providing goods and services, such as merit and public goods, which are not provided adequately by profit-maximizing firms. Finding a right mixture of allowing market forces to allocate resources and government regulations is a challenge, as government interference in resource allocation also brings a variety of inefficiencies.

4. (J02/04/7a)

'Economic analysis is preoccupied with efficiency.'

(a) Explain what economists mean by the term 'efficiency'. [10]

Identification that economic efficiency is of two types, productive and allocative (1 mark). Resource allocation is allocatively efficient when the welfare of the society is maximized (1 mark) and that is where Marginal Social Benefit (MSB) equals Marginal Social Cost (MSC) of the last unit (1 mark). A correctly labeled diagram, where the intersection of a downward sloping MSB and upward rising MSC determines the socially optimal level of output (1 mark). A firm is allocatively efficient when it charges a price (the value the consumer attaches to the product) equal to the Marginal Cost (MC) of the last unit (1 mark). A resource allocation is efficient when it is impossible to make someone better off without making someone else worse off i.e. Pareto Optimality (1 mark).

Productive efficiency is achieved when a firm / country produces maximum output with available resources (1 mark) i.e. produces at its Production Possibility Curve (1 mark). Production of a commodity can be increased only if the production of the other is decreased (1 mark). A firm is productively efficient when it minimizes the average cost for its output (1 mark). A correctly labeled PPC (showing full utilization of resources) or Average Cost Curve (showing that the firm is producing at the lowest average cost) (1 mark).

[Note: Maximum 6 marks for discussing either allocative or productive efficiency, and maximum 10 marks for discussing both]

5. (J02/04/7b)

(b) Discuss how governments might use the concept of efficiency in deciding economic policy. [15]

[Maximum 11 marks for discussing how the government can use the concept of efficiency]

[Maximum 6 marks for discussing how the government can use the concept of allocative efficiency]

The government can use taxes, subsidies and legislative powers to correct market failure and achieve allocative efficiency (1 mark). Price mechanism overproduces demerit goods and goods with negative externalities as it ignores external cost (1 mark). The government can force firms to decrease output to its socially optimal level by converting the external cost into internal cost (1 mark) by the use of taxes, tradable pollution permits and legislative powers (1 mark). Price mechanism under produces merit goods because of information failure (1 mark) and goods with positive externalities as it ignores external benefits (1 mark). The government can use subsidies, a public campaign and self-financing to increase output (1 mark). Monopoly under produces as it restricts output to maximize profits and charges a price higher than the marginal cost (1 mark). The government can use taxes and subsidies to force monopoly to increase output (1 mark).

[Maximum 6 marks for discussing how the government can use the concept productive efficiency]

Though a perfectly and mosopolistically competitive firm has to be productively efficient, as, in the long run, it cannot charge a price higher than AC (1 mark), a monopoly, because of its ability to make supernormal profits even in the long run, tends to be productively inefficient (1 mark).

In order to force firms to be productively efficient, the government can tax profits of the firms (1 mark). A tax on profits decreases profits of the firms (1 mark) and increases pressure on them to produce at the lowest average cost (1 mark) so that the profit margin is retained (1 mark).

[4 marks for the evaluation part]

It is difficult for governments to estimate the exact monetary value of external cost / external benefit (1 mark), so the accurate amount of tax / subsidy needed to bring the output close to the socially optimal level cannot be determined (1 mark). Taxes have their third party effects (e.g. the effects of tax on unemployment) (1 mark) and subsidies encourage inefficiencies (1 mark) and are often given to those who are not the actual target (1 mark), so it is not guaranteed that government intervention will result in the socially optimal level (1 mark).

6. (N05/04/2a)

The French government stated that it was keen to achieve economic efficiency through policies that encouraged a free market. Despite this, in 2003, it bought 30% of a private French industrial group, which was facing bankruptcy. The company is one of France's major engineering groups and employs over 110 000 people.

(a) Explain what is meant by efficient resource allocation in a free market. [10]

Definition and explanation of free market and price mechanism (up to 2 marks)

Recognizing that resource allocation is efficient when society welfare is maximized (1 mark) and where the marginal social benefit of the last unit equals the marginal social cost (1 mark), and a correctly labeled diagram showing clear intersection of the downward sloping MSB and upward rising MSC (up to 2 marks)

Units that contribute more to benefit and less to cost (MSB>MSC) should be produced to raise welfare (1 mark) and those whose MSB is less than MSC should not be made (1 mark)

Understanding of Pareto optimality (1 mark)

Recognizing that the sale price should equal the marginal cost of the last unit produced for efficient resource allocation (1 mark)

7. (N05/04/2b)

(b) Would you agree that in some circumstances it is best to accept decisions such as that of the French government and abandon the search for economic efficiency through the free market? [15]

For analysis of strengths and weaknesses of free market (up to 10 marks)

Free market is likely to allocate resources efficiently (up to 7 marks)

Free market is motivated by the incentive of profit, so it is likely to be more efficient (1 mark)

Competition keeps firms on their toes, leading to greater efficiency (1 mark)

Consumer sovereignty means that firms will use production methods that will provide more variety of goods (1 mark), hence greater customer satisfaction (1 mark), resulting in reduced wastage (1 mark) and more innovation/research and development (1 mark)

Workers are also motivated by better rewards, resulting in better performance and greater efficiency (1 mark)

However, at times, price mechanism fails to allocate resources efficiently (up to 7 marks)

Over allocation of resources in case of demerit goods (1 mark) and negative externalities (1mark) as external costs are ignored (1 mark)

Under allocation of resources in the case of merit goods (1 mark), positive externalities (1 mark) and monopoly (1 mark)

Monopoly restricts output and raises the price to maximize profits and produces where the price exceeds the marginal cost, thus it is allocatively inefficient (up to 2 marks)

For evaluation (up to 5 marks)

In some cases, government intervention becomes desirable such as to control monopoly abuse through taxes and subsidies, forcing it to raise output (1 mark)

Where information failure leads to under or over allocation of resources, it is a case of merit and demerit goods (1 mark)

Where price mechanism under or over allocates resources by failing to recognize external costs or benefits (1 mark)

Where it is feared that closure of a strategically important business may trigger recession and cause massive unemployment such as the private French industrial group (1 mark)

However, intervention of the government has its opportunity cost (1 mark) and can lead to inefficiencies (1 mark), and tax payers may object to spending on a private industrial group to safeguard it against its inefficiencies (1 mark)

8. (J12/41/7)

Explain the difference between productive and allocative efficiency and discuss the suggestion that it is only possible to achieve such efficiencies through government intervention. [25]

Understanding of productive efficiency (up to 4 marks)

A resource allocation is productively efficient when output is maximized and more of a product can only be produced by choosing to produce less of something else (1 mark). All points on a production possibility curve (PPC) are productively efficient (1 mark). A correctly labeled production possibility curve showing full utilization of resources and productive efficiency (1 mark). Productive efficiency implies that all output is produced at minimum cost i.e. average cost (AC) is lowest (1 mark).

Understanding of allocative efficiency (up to 4 marks)

A resource allocation is efficient when welfare of the society is maximized and it is impossible to make someone better off without making someone else worse off (1 mark). This principle is known as Pareto Optimality (1 mark). A resource allocation is efficient when the marginal social cost of last unit equals marginal social benefit (1 mark). A firm is allocatively efficient when it charges a price equal to the marginal cost (MC) of the last unit produced (1 mark).

Analysis of productive efficiency in different markets (up to 4 marks)

A firm tends to be productively inefficient if it charges a price higher than AC as the pressure to decrease cost is reduced (1 mark). However, firms making normal profits have no option but to be productively efficient (1 mark).

Perfectly and monopolistically competitive firms may be productively inefficient in the short run since charging a price higher than average cost is possible, but they must be productively efficient in the long run if they are to survive, since charging a price higher than average cost is not possible (1 mark).

Monopoly can be productively inefficient both in the short and long run since charging a price higher than average cost is possible (1 mark).

Analysis of allocative efficiency and market failure in different markets (up to 6 marks)

A perfectly competitive firm is likely to be allocatively efficient in both the short run and long run since it charges a price equal to the marginal cost of the last unit (1 mark). However, it may be allocatively inefficient if marginal social cost exceeds marginal private cost (1 mark). This is a case of negative externalities and the firm tends to overproduce as it ignores the external cost (1 mark). The firm also fails to allocate resources efficiently when marginal social benefit exceeds marginal private benefit (positive externalities). In such cases, the firm underproduces as it is unable to charge a price for external benefits (1 mark).

Markets / firms are unable to provide public goods as a price cannot be charged and hence no profits can be made because of public goods being non excludable (1 mark). Firms underproduce merit goods and overproduce demerit goods (1 mark) because of information failure i.e. true benefits and cost of such goods are not known to many (1 mark).

Another case of market failure is monopoly, which restricts output to raise prices. Since price and MR diverge, equating MC and MR to maximize profits results in allocative inefficiency, as the price that exceeds MR also exceeds MC (up to 2 marks).

Analysis of government intervention to correct market failure (up to 4 marks)

Governments may subsidize firms that are producing below the socially optimal level (merit goods, goods with positive externalities, monopolies) to encourage them to increase output and bring it closer to the socially optimal level (up to 2 marks).

Governments may impose taxes on output of firms that are overproducing (demerit goods, negative externalities) to force them to decrease output (up to 2 marks).

Governments may tax the profits of big firms (such as monopoly) to encourage them to be more cost efficient (1 mark).

Governments may use their legislative powers, such as licencing, to correct market failure (1 mark).

Analysis of the limitations of government intervention to correct market failure (up to 3 marks)

Government intervention, such as taxes, have their own external / third party cost (1 mark), so taxes should be imposed in such a manner that instead of discouraging production and investments, they encourage firms to use more environment friendly production techniques (1 mark). The principle that “the polluter must pay” should be followed and high taxes charged on those who pollute more, and incentives and subsidies given to those who are more sensitive to the environment (1 mark).

(Sample Ex GCE Econ H060)

The UK government generated a tax revenue of £12.3 billion in 2012-13 through the sale of all tobacco items in the UK, making tobacco one of the most taxed industries in the world.

Evaluate, using an appropriate diagram(s), the effectiveness of taxes as a method to curb smoking and correct market failure. [20]

Answer

Level 4 (16-20 marks)

Good knowledge and understanding of taxes as a method to curb smoking and correct market failure.

Strong analysis of taxes as a method of curbing smoking and correcting market failure. A relevant and accurately labelled diagram is provided and is linked to the analysis.

Strong evaluation of the effectiveness of taxes as a method of curbing smoking and correcting market failure.

There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated.

Level 3 (11-15 mark)

Good knowledge and understanding of taxes as a method to curb smoking and correct market failure.

Good analysis of taxes as a method of curbing smoking and correcting market failure. A relevant diagram is provided and is linked to the analysis.

Good evaluation of the effectiveness of taxes as a method of curbing smoking and correcting market failure.

There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence.

Level 2 (6-10 marks)

Reasonable knowledge and understanding of taxes as a method to curb smoking and correct market failure.

Reasonable analysis of taxes as a method of curbing smoking and correcting market failure. A relevant diagram is provided, which is less than perfect.

Reasonable evaluation of the effectiveness of taxes as a method of curbing smoking and correcting market failure, but without a judgement being made.

The information has some relevance and is presented with limited structure. The information is supported by limited evidence.

Level 1 (1-5 marks)

Limited knowledge and understanding of taxes or market failure.

Limited or no analysis of taxes as a method of curbing smoking and correcting market failure.

Limited or no evaluation.

The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear.

0 marks – no response or no response worthy of credit.

Guidance

At Level 4, candidates may provide a nuanced conclusion, why consumers over consume cigarettes and the extent to which taxes are effective in correcting market failure.

Candidates may be given credit for suggesting and evaluating alternative policies such as certain restrictions on the sale, advertisement and consumption of tobacco items as a means to correct market failure. These may include restrictions on shelving and display of tobacco items in stores; on cigarette consumption in an increasing number of public spaces, near kids and/or while driving; and on televised or printed advertisements.

The effectiveness of combining taxes with additional measures such as the above and/or government and community efforts in creating public awareness and promoting anti-smoking campaigns can be discussed. Candidates can remark that the imposition of taxes helps generate revenues for such measures.

Candidates can use a diagram to illustrate the negative externalities of cigarettes.

Here, recognition is required of how the social cost of smoking exceeds private costs, leading to overproduction and over consumption (Q0 > Q1) of tobacco items. External costs of smoking can also be identified, such as fire hazards, passive smoking, decreased life expectancy, increased health bill, increased absenteeism at school or work owing to health issues and loss of productivity, increased pressure on health facilities and associated state spending, littering caused by used cigarettes packs and spread of life-threatening diseases such as lung cancer and cardiac attacks.

Candidates must display with the help of another diagram the effect of taxes in correcting market failure. They must demonstrate how the imposition of a tax shifts the supply curve upwards, raising price and lowering consumption by signaling consumers to reduce use, quit smoking and/or never take it up. The revenue generated from taxes can help finance other anti-smoking efforts.

Candidates, however, can remark that cigarettes are habit forming goods and are thus in high demand despite (existing) high taxes. This means that while their relative price inelastic demand can help governments generate higher revenues, it may not prove too effective in curbing smoking. Also, higher taxes incentivize corrupt behavior such as tax evasion, smuggling and illicit smoking. They may also argue against taxes, stating that higher taxes can result in the closure of factories and loss of job opportunities.

Candidates recognise that since people underestimate the true cost of smoking, the resulting information failure makes tobacco a demerit good.

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UNIT 5

Factor Market

Syllabus 2019 –21

ON03/P04/Q3b
MJ14/P42/Q7a
ON08/P04/Q5
MJ14/P42/Q4
MJ13/P43/Q3a
MJ13/P43/Q3b

A Level
Economics
Topical Paper 4

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UNIT-5 FACTOR MARKET

1. (N03/4/3b)

In some economies in 2001 there was a decline in the number of people travelling by air.

Unemployment increased as many people lost their jobs in hotels, airline companies and tourist-related industries. Similar jobs in other industries were advertised at reduced wage rates.

(b) Discuss how far economic analysis is of use in explaining the change in wage rates mentioned above. [15]

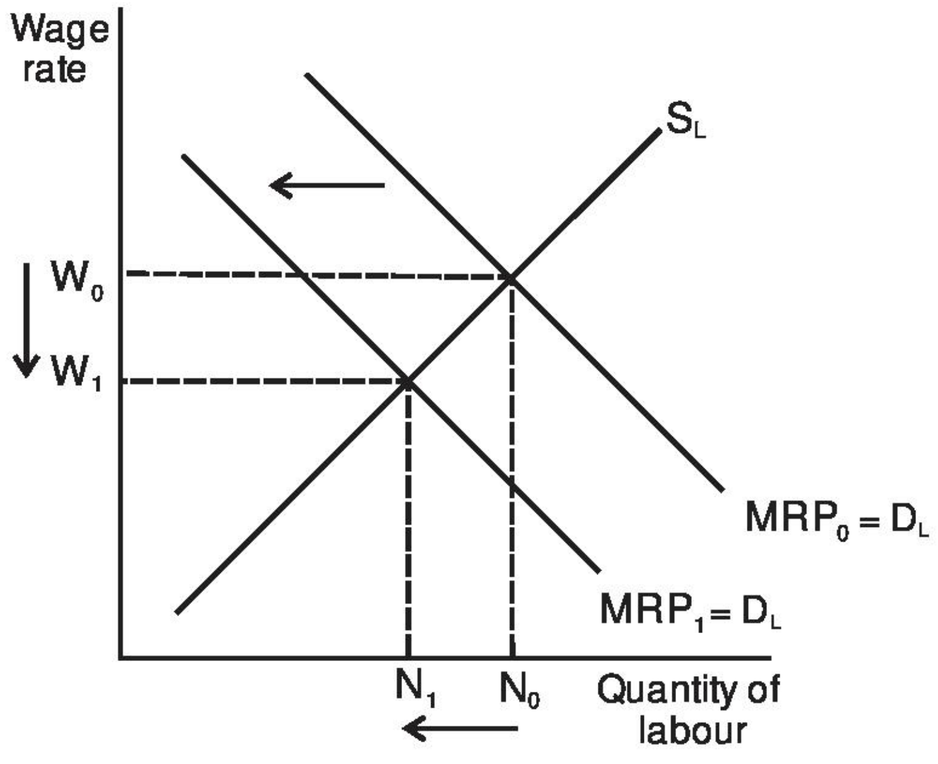
Analysis of the economic theory of wage determination (up to 4 marks)

Demand for labour is a derived demand and depends on the demand for goods and services labour helps to produce. Demand for labour is Marginal Revenue Product (MRP), which is a product of Marginal Product i.e. MP (additional units produced by hiring an extra worker) and sale price of the final product (P). According to the economic theory of wage determination, a firm hires workers as long as their MRP exceeds or is at least equal to the wage paid for hiring them. The marginal revenue productivity theory assumes perfect conditions in both product and labour markets, homogenous products, workers having uniform skills, a large number of buyers and sellers, low entry and exit barriers, perfect information, and that no individual firm / consumer / worker is able to influence market forces.

Analysis of the impact of decreased demand for air travel on wages in tourism industry (up to 4 marks)

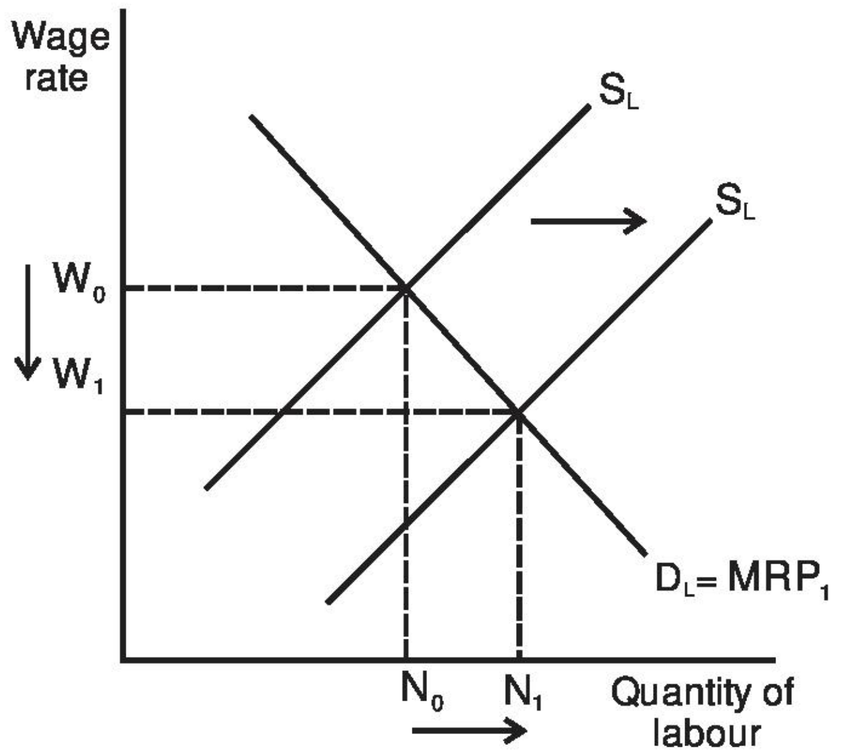
A fall in the demand for air travel reduces the price of air travel and the MRP of workers employed in the tourism and travel sector, resulting in reduced demand for labour and either reduces wages or causes unemployment.

As shown in the diagram below, decreased sale price of air travel reduces MRP of labour and shifts labour demand curve towards the left, resulting in a surplus of workers. If market forces are allowed to operate freely, this will lead to a fall in wages.



Analysis of the impact of decreased wages in tourism industry on wages in other industries (up to 3 marks)

The lower demand for labour and hence lower wages in the tourism related sector forces workers to pursue their careers in other occupations, leading to an increased supply in other industries. As shown in diagram below, the rightward shift of the supply curve will result in lower wages in other industries as well.



Lower wages raise the number of employed workers, as hiring workers even with a lower MRP becomes feasible for the firms. MRP slopes downward and a fall in wages, as shown in diagram above, results in hiring of more workers.

Evaluation of economic theory of wage determination (up to 4 marks)

The economic theory of demand and supply and Marginal Revenue Productivity theory explain the trend in wages as decreased wages in the tourism related sector are explained by a fall in the demand for workers, which is a consequence of a fall in the demand for air travel. The fall in wages of other industries is also explained by the increase in supply of labour in such industries. However, the theory of MRP assumes conditions of perfect competition, which in reality, don't exist. The wages may not fall even after a fall in the demand for labour because of government minimum wage legislation, strong trade unions and contractual rights of workers. It is also not easy to determine the MRP of each worker and pay him accordingly. Nonetheless, this theory still gives an insight into how labour markets operate in the real world and how wages respond to changes in demand and supply conditions.

2. (J14/42/7a)

(a) Too much labour but not enough capital. Is this the most significant difference between a developing and a developed economy? [12]

Developing countries are usually highly populated countries, as they have high birth rate and low access to contraceptive measures. Since the death rate of these countries is usually high because of poor food, health and sanitation facilities, the population of these countries is usually young, resulting in high working population. However, most of these workers are either unskilled or semi-skilled, as firms as well as the public sector spend too little on training of workers and human resource development. Lack of education and training opportunities reduces skills and

productivity, and raises unit labour cost, even when labour is available in abundance in developing economies.

The capital-labour ratio is usually very low in developing countries, as the lack of resources of developing economies decreases their investment in capital, making capital relatively scarce in comparison with labour. However, low capital-labour ratio is not the only difference between developed and developing economies.

In developing economies, Human Development Index (HDI) is usually poor, as per capita income is low, since a relatively small GDP is divided over a larger population. Poor quality of food, poor health facilities and lack of sanitation also reduce life expectancy. Governments as well as the private individual have less resources to spend on education, resulting in a reduced literacy rate.

Developing countries face budget deficits as the collection of tax revenues is low because of low incomes and lack of documentation. The exports of developing countries are usually primary goods, which are low in value, whereas their imports are value added items, resulting in trade deficit. The persistent budget and trade deficit force developing economies to borrow more, which results in high internal as well as external national debt.

The saving ratio is usually low, which makes it difficult to spend on education and health, decreasing prospects of growth. Most of the population lives in rural areas and is involved in the production of primary goods. Unemployment is usually high and employed workers are also paid lower wages, resulting in poorer living standards.

Students will get level 4 / full marks if they explain and develop the above characteristics. A list like approach will win them a maximum of 6 marks.

3. (N08/04/5)

The economic theory of wages assumes first that there is a perfect market and secondly that the market will reach a stable equilibrium. It therefore has little relevance to a commercial world full of change and uncertainty.

Discuss whether you agree with this opinion. **[25]**

For knowledge and understanding of MRP Theory and Perfect Competition (up to 7 marks)

For knowledge and understanding of MRP Theory (up to 4 marks)

The economic theory of wages is commonly known as Marginal Revenue Productivity (MRP) theory (1 mark). MRP is the product of sale price/MR and MP (1 mark) and is the demand of labour (1 mark). Labour demand is a derived demand i.e. labour is demanded because of the demand of goods and services that labour helps to produce (1 mark). Definition of MRP: It is the revenue generated by hiring an additional worker (1 mark).

For knowledge and understanding of Perfect Competition (up to 4 marks)

Perfect competition assumes a large number of buyers (firms) and sellers (labourers) who independently decide about buying and selling labour services, so the actions of one firm or one worker cannot influence the market wage or other market conditions. There are no entry barriers and the skills needed by a labourer to enter the market are simple and can be acquired easily. All workers have a similar level of skills, and jobs offered by firms are also similar in nature. There is perfect knowledge.

For application (5 marks)

MRP slopes downward because of diminishing returns (1 mark). Workers whose MRP exceeds their wage should be hired and those whose wages exceed MRP should not be hired, so equilibrium is where MRP equals the wage (up to 2 marks). A correctly labelled diagram showing equilibrium in labour market i.e. where MRP intersects the straight horizontal wage line (up to 2 marks).

For analysis (up to 7 marks)

In reality, it is hard to fulfil the conditions of perfect competition as there are many imperfections (1 mark). Labour market is often dominated by a large firm such as Monopsony, which can influence wages (1 mark). Since such firms have to raise wages of all workers to attract more workers, the wage and MIC diverge (1 mark), and instead of hiring workers where wage equals MRP, they hire fewer workers and pay them lower wages by equating MRP and MIC (1 mark), deviating from the equilibrium. A correctly labelled diagram (up to 2 marks).

Trade union is another market imperfection, and can force firms to pay workers a salary in excess of MRP through collective bargaining power, another situation where the equilibrium position will be compromised (up to 2 marks).

For evaluation (6 marks)

Though there are imperfections in a real labour market and it is hard to achieve a stable equilibrium (1 mark), this theory is still a good indicator of how wages are determined as workers with higher MRP usually command higher wages (1 mark) because their demand is more. In real life, it is difficult to accurately determine the MRP of an individual worker (1 mark) and firms do not actually compare individual MRP with the wages they pay in the real world (1 mark). The equilibrium where MRP equals the wage/MIC may only be a mathematical fantasy (1 mark) and in real life, expecting such precision is highly unlikely (1 mark).

4. (J14/42/4)

Wage rates in some non-essential occupations, such as entertainment, are very high while wage rates in essential occupations, such as public sector hospital nurses, are much lower. This is unfair.

Analyse how economic theory can explain these differences in wage rates and consider whether you agree with the conclusion of this statement. [25]

Analysis of the economic theory of wage determination (up to 9 marks)

According to Marginal Revenue Productivity (MRP) theory, a firm should hire workers if the MRP is at least equal to the Marginal Input Cost (MIC) (1 mark) or the wage rate. MRP is the product of sale price / MR and Marginal Product (MP) (1 mark). Labour demand is a derived demand and is dependent on the demand for goods labour helps to produce (1 mark). MRP is the demand for labour (1 mark). Labour with higher abilities have higher MP, higher MRP, higher demand and hence higher wages (1 mark). Labour, whose products can be sold at a higher price, has higher MRP, higher demand and hence higher wages (1 mark). The theory of MRP assumes perfect competition i.e. large number of firms / employers and labourers who have similar skills and abilities. It also assumes that no worker or firm is in a position to influence market wage and new workers can easily enter or leave the market (up to 2 marks).

Correctly labeled demand and supply curves for labour in a perfectly competitive market (1 mark)

Analysis of the MRP theory to explain the differences in wage rates (up to 8 marks)

People with a talent to be entertainers are few in number as such talent is unique and rare (1 mark), so they have a higher MP, higher MRP, higher demand and hence higher wages (1 mark). It is not easy to become an entertainer as the skills are usually natural and cannot be acquired easily, so the supply of such workers is low and wages are high (1 mark). The services entertainers sell such as a live concert, a music dvd, a play, a movie are usually sold at a higher price, have higher MRP, higher demand and hence higher wages (1 mark).

The hospital nurses, though perform an essential service of assisting patients, do not require a high level of skill set. The training and qualification needed to become a nurse are not very demanding (1 mark), so their supply is usually large, resulting in lower MP, lower MRP, lower demand and hence lower wages (1 mark). Public sector hospitals provide a subsidized service to its patients, so a lower price for the hospital services results in lower MRP, lower demand and hence lower wages for the nurses (up to 2 marks).

Analysis of the limitations of the MRP theory (up to 6 marks)

MRP theory assumes perfect competition, but in reality, it hardly exists (1 mark). MRP theory assumes that neither the workers nor the firms can influence wages, but in reality, the trade union can influence wages through collective bargaining (1 mark) and often succeeds in winning a wage increase higher than the productivity (1 mark). Firms, through producers association or through monopsony power (1 mark), hire too few workers and pay them low wages (1 mark). It is hard to calculate the MRP of an individual worker, so the theory has little relevance in the real market (1 mark).

Evaluation that the difference in wages is unfair (up to 2 marks)

The principles of a market economy must accept the difference in wages, which is explained by the difference in productivity (1 mark), however, a very high difference in wages is unfair and leads to greater income disparities (1 mark).

5. (J13/43/3a)

Explain how the quantity of labour employed and the wage rate are determined by a firm in a perfectly competitive labour market. [12]

Mark Scheme:

Assumptions of perfectly competitive labour market (up to 3 marks)

Assumption that the law of diminishing returns apply and a brief explanation of the law (up to 2 marks)

Determination of equilibrium wage and quantity of labour in a perfectly competitive market (up to 2 marks)

Determination of equilibrium wage and quantity of labour by a perfectly competitive firm (up to 5 marks)

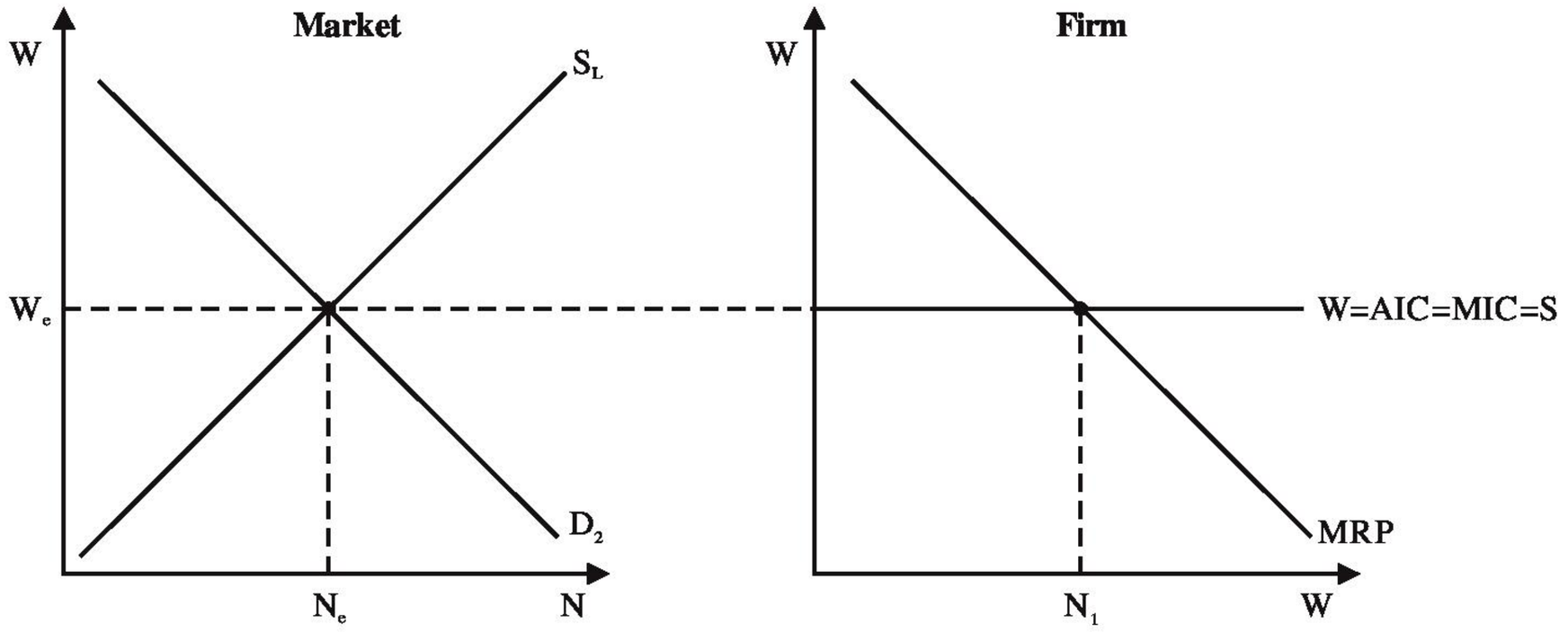
Sample Answer:

It is assumed that a perfectly competitive market consists of a large number of firms seeking to employ labourers and a large number of workers who are willing to work and actively seeking jobs. There is no producer's or firm's association, and all firms, which are small sized, act independently and hire very few workers. Thus, actions of one individual firm have no significant influence on market conditions. Similarly, it is assumed that there is no trade union and collective bargaining, and all workers individually and independently choose their workplace. Decisions of individual workers thus have no impact on market demand and supply.

It is also assumed that all workers are similar in abilities and qualifications. Likewise, all firms provide similar job conditions i.e. location of the firms, safety at work and perks, if any. Jobs are simple and do not require high qualifications. It is easier for new workers to enter the job market. All the firms and workers are assumed to have perfect knowledge.

In a perfectly competitive labour market, the intersection of demand and supply curves (which show/reflect the choices and decisions made independently by a large number of firms and workers) determines the market equilibrium wage and quantity of workers.

Firms in a perfectly competitive market are wage takers i.e. their small size allows them to hire any number of workers at the prevailing market wage, thus the supply curve of labour faced by the firm is a straight horizontal line. As more workers can be employed at the same wage, wage rate equals Marginal Input Cost (MIC).



A perfectly competitive firm will hire only those workers who will contribute more to the revenues and less to the cost i.e. Marginal Revenue Product (MRP) exceeds or is at least equal to Marginal Input Cost (MIC). MRP is a product of sale price of final good and marginal product (MP). In a perfectly competitive market, more units can be sold at the same price but MRP still falls because of diminishing returns. Assuming other factors constant, combining more and more quantities of labour with a fixed quantity of capital initially increases output at an increasing rate (rising MP), but eventually, as fixed inputs become overburdened, the additional workers produce lesser and lesser units (diminishing returns i.e. falling MP). A perfectly competitive firm will hire workers where MRP equals MIC.

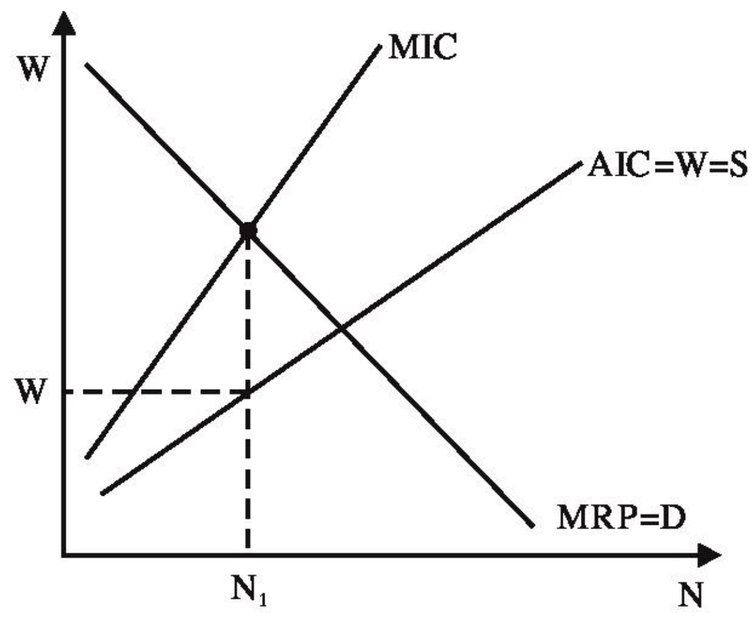
An individual firm in a perfectly competitive market has no role in determining wage. However, it can only choose the number of workers it wishes to employ at the given market wage. In case market wage rises, MRP will be equal to wage at a lower employment level, resulting in less demand of workers at a higher wage, thus MRP is demand for labour.

6. (J13/43/3b)

(b) Discuss why wage rates might be different in practice from those in a perfectly competitive labour market. [13]

Perfectly competitive markets do not exist in the real world. In contrast to a perfectly competitive market, which assumes the availability of a large number of similar jobs, only a handful job opportunities are available in reality, which vary in perks, facilities and career prospects. Similarly, firms also face a limited number of options while hiring workers, so it is virtually impossible to find a market where a large number of employers and labour operate, as assumed in the case of perfectly competitive market. Especially for jobs requiring specialized skills and high qualification, such as a stock market analyst or neuroscientist, firms may be forced to pay a higher wage to attract those few who are capable of handling those challenging jobs. On the other hand, simple jobs which can be performed easily and without much training are low paid jobs and firms often exploit such workers by paying them low wages.

The markets are imperfect as workers are not homogeneous and vary in their qualifications, abilities, experience, skills and attitude towards work. Thus, workers with better qualifications and more experience are rare and succeed in commanding higher wages. However, workers are usually larger in number in comparison with employers/firms and thus have weaker bargaining power, resulting in a lower wage for them. To strengthen their bargaining power, workers form trade unions and may command higher wages through collective bargaining. On the other hand, a single firm in labour market i.e. monopsony dominates the labour market and often succeeds in paying lower wages by offering fewer job opportunities. In the diagram below, monopsony hires N1 workers (where MIC equals MRP) and pays them lowest possible wage W, given by the height of the supply curve. In comparison with perfectly competitive market, monopsony hires too few workers and pays too little wages.



Another imperfection is in the form of government intervention in the labour market. Governments often impose minimum wages, which are usually higher than the market wage and prevent the market from reaching the true equilibrium.

Other imperfections may include lack of information, geographical constraints, gender/ethnic discrimination, which may hamper the process of smooth operations of a perfectly competitive market.

Besides all the flaws and limitations of perfectly competitive market theory and its irrelevance to most of the real situations, this theory is still useful as it is the only model which enables us to analyse market behavior with the help of demand and supply forces. Also, studying this perfect model allows us to analyse the extent to which the real world and markets deviate from it.

UNIT 6

Per Capita Income, Living Standards, Developing Economies

Syllabus 2019 –21

ON02/P04/Q6
ON03/P04/Q3a
MJ14/P42/Q7b
ON12/P43/Q7
MJ07/P04/Q4
MJ12/P43/Q6a
MJ12/P43/Q6b

A Level
Economics
Topical Paper 4

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UNIT-6 PER CAPITA INCOME, LIVING STANDARDS, DEVELOPING ECONOMIES

1. (N02/04/6)

The aim of most developing countries is to become developed. If this aim is achieved, will it always bring benefit to the population of the developing country? [25]

The benefits and challenges of developed economies (up to 20 marks)

The benefits of developed economies (up to 10 marks)

The transformation of a developing economy into a developed one raises national income and improves living standards. The greater purchasing power of an average citizen increases their purchasing power to afford better quality food, education and health facilities. The better quality food, increased access to clean drinking water and sanitation, and provision of better health services reduces death rate and raises life expectancy. The improved health and education facilities, usually found in developed countries, raise skills and productivity of workers, enabling them to find better paying jobs. The increased awareness of contraceptive methods helps reduce birth rate and population, and enables economies to spend scarce resources more optimally.

The government will have greater tax revenues through income taxes (as people will be earning more), indirect taxes (as people will be spending more) and corporate taxes (as firms will be making more profits). This revenue could be spent on the welfare of the people, and on building infrastructure, which will further contribute to rising living standards. The improved soft infrastructure, such as better education and health, and improved physical infrastructure, such as roads, airports and dams, make the country an attractive destination for domestic as well as foreign investors. This not only helps accelerate economic growth and create job opportunities, but also helps in utilizing scarce economic resources more efficiently.

The challenges of developed economies (up to 10 marks)

However, development brings its challenges and problems. The increased economic activity and industrialization may lead to problems of pollution and road congestion, hampering the quality of life. The increased migration from rural to urban areas raises pressure on the civic facilities of cities and may lead to higher unemployment and crime rate. Economic development may also raise income inequalities, since low income earners will be trapped in a poverty trap, having less money to spend on education and health. Thus, the children of such income earners will be restricted to poor paying jobs and a low standard of living, whereas the children of rich families will most likely get better paying jobs because of their ability to spend on better quality education. Economic development also brings many social challenges such as increased female independence, ending of joint family system, and increased number of single parents. Such rapid changes may not be pleasant for more traditional societies.

Developed economies put extra pressure on people to earn more to keep up with the rising requirements of living in a developed country. They may tend to borrow more to finance house and car purchases, and the heavy debt and the pressure of its repayment raises stress as well as working hours, leaving lesser time for quality family life.

Reasoned conclusion (up to 5 marks)

Economic development is more desirable when it is sustainable and its benefits are fairly distributed among different people, regions and generations. Economic development that benefits only the rich and elite is not sustainable, as it triggers income inequalities and puts a greater portion of population under stress and discomfort. Economic development that leads to inter-regional disparities, i.e. only some parts of the country (e.g. cities) grow and other areas (especially villages) remain underdeveloped, will not be sustainable either, as majority of the population living in rural areas will not benefit from economic development. Rapid economic growth and industrialization may speed up the utilization of scarce economic resources and damage the environment, leaving less for future generations. Economic development is sustainable and desirable when the costs of economic growth are not borne by future generations.

2. (N03/04/3a)

In some economies in 2001 there was a decline in the number of people travelling by air. Unemployment increased as many people lost their jobs in hotels, airline companies and tourist-related industries. Similar jobs in other industries were advertised at reduced wage rates.

(a) Explain the different types of unemployment and suggest which type the above unemployment might be. [10]

Discussion on the types of unemployment (up to 6 marks)

Unemployment means those who are willing and able to work are unable to find jobs. One of the types of unemployment is frictional. Frictional unemployment occurs when people are 'between jobs' i.e. they switch from one job to another. Though job opportunities exist, due to frictions and imperfections in the labour market, workers will take some time in searching for an appropriate job. Another type of unemployment is casual i.e. when changing jobs becomes frequent e.g. daily wagers and workers working in construction are casually unemployed. Seasonal unemployment, a category of frictional unemployment, arises when changing jobs becomes frequent and takes place at regular intervals e.g. workers in a hill resort are seasonally unemployed in off-peak season.

Structural unemployment is caused by a mismatch between the characteristics i.e. the requirements of a job and the abilities, qualifications and expertise of workers. Rapid technological developments create a divergence between workers' skills and job requirements leading to increased technological and structural unemployment.

Cyclical unemployment is caused by low levels of demand and prevails during recessions. Falling demand in the economy leads to reduced demand for labour.

Analysis of the type of unemployment mentioned in the question (up to 6 marks)

The unemployment caused in hotels, airline companies and tourist related industries could be seasonal, as tourists stop visiting in off-peak seasons. This decreases the demand for labour in these businesses. This unemployment could also be cyclical, as the economy may have been hit by a recession, which lowers the purchasing power of people. The reduced purchasing power reduces the demand for normal goods such as tourism and leads to decreased demand for workers in the tourism industry. The unemployment could also be structural, as workers with skills to work in the tourism industry find it harder to get jobs in other more growing industries because of lack of relevant skills for those industries.

Maximum 10 marks

3. (J14/42/7b)

Discuss whether GDP is a reliable measure of the difference in living standards between developing and developed economies. [13]

GDP reflects living standards, as higher GDP results in higher per capita income, which means greater purchasing power and access to more goods and services. Higher income enables people to afford better quality food, better health and sanitation facilities and better education, all contributing to better living standards. Developing countries may experience poorer living standards, even with high GDP, as per capita GDP will still be low because of high population.

Measuring national income with accuracy is difficult in developing countries, as there is a large size of non-documented (grey/parallel/underground) economy because of low literacy rate, a greater tendency to evade incomes and taxes, and lack of information technology. This makes GDP estimates a less reliable measure of living standards.

Developing countries usually have wide income inequalities, thus GDP and per capita income may not necessarily reflect the 'average' standard of living. Majority of the people are poorer than what is reflected by per capita income, as a significantly large chunk of GDP is with the few rich.

The debt-GDP ratio is also very high for developing economies, forcing them to spend a greater portion of national income on debt servicing and loan repayment. Additionally, most of the developing countries are war ridden and have to incur huge military and defense expenses, leaving very little to be spent on the welfare of the general public. Thus, living standards are usually poor in developing countries than reflected by GDP.

Developed countries usually have better law and order conditions, lower crime rate, more political and economic stability, access to health and educational services, freedom of expression and speech, entertainment opportunities, supremacy of law, justice and good governance. Thus, the living standards in developed economies may even be better than what is reflected by GDP and per capita income.

GDP is usually calculated in US dollars for comparison between different countries. The exchange rates are determined by the flow of tradable commodities i.e. exports and imports only. Using purchasing power parity theory to express GDP in place of traditional exchange rate improves the figure for developing countries. Purchasing power parity theory determines exchange rates considering the flow of not just tradable commodities but also non-tradable commodities. Non-tradable commodities such as a haircut, car repair, dentist's treatment and all services which are provided at an arm's length distance are cheaper in developing countries. Thus, the exchange rate moves favourably for them, once non-tradable commodities are also included in exchange rate calculations. Thus, GDP estimated at traditional exchange rates does not truly reflect the difference in purchasing power in developing and developed economies.

Alternatively, standard of living may be measured using Net Economic Welfare (NEW) or the Human Development Index (HDI). Net Economic Welfare (NEW) or Measured Economic Welfare (MEW) adds factors to per capita income which improve standard of living such as leisure time and deducts factors that reduce quality of life e.g. negative externalities arising from polluted environments. So, mathematically, MEW/NEW is per capita income + leisure – negative externalities.

Human Development Index measures national socioeconomic development based on measures of life expectancy at birth, educational attainment and adjusted real per capita income. Developed economies where most of the people have access to better educational opportunities and medical care are likely to have a better standard of living than reflected by per capita income.

One may still be forced to employ GDP and per capita income as indicators of living standards rather than NEW or HDI as assigning exact monetary values to leisure time, negative externalities and educational attainment is a challenging task.

4. (N12/43/7)

The table below shows figures for GDP for two countries in 2000 and 2010.

Country	GDP 2000 $US billions	GDP 2010 $US billions
USA	9825	13271
India	469	929

Discuss whether the above figures are sufficient to conclude that the standard of living in the USA is higher than the standard of living in India. [25]

Per capita income estimates reflect living standards, as higher per capita income means greater purchasing power and access to more goods and services (1 mark).

Measuring national income with accuracy is difficult and hence any estimates of per capita income cannot be relied upon (1 mark).

Per capita income shows the average income of citizens but because it remains silent on issues regarding income distribution, it may not necessarily reflect the 'average' standard of living (1 mark). Countries with wide income inequalities have overrated living standards because in reality, majority of the people are poorer than what is reflected by per capita income (1 mark).

It is useful to analyze the individual components of GNP, rather than the aggregate. For instance, countries spending a greater portion of national income on debt servicing and defense expenses have a poorer standard of living compared to those where greater proportions are consumed by general public or spent by governments on improving law and order and building infrastructure (up to 2 marks).

Imports are deducted from national income, but countries with trade deficits (exports falling short of imports) experience better current living standards as they have access to a greater amount of good and services than what they produce. USA has traditionally maintained a huge trade deficit, so its citizens enjoy a better living standard than what is reflected by per capita income (up to 2 marks). Countries importing machinery, equipment and other capital goods may be sacrificing existing quality of life but experience rapid economic growth and a better standard of living in future years. India has been a major importer of machinery and equipment, so its current living standard may be poorer than what is reflected by national income figures (up to 2 marks).

Per capita income is usually expressed in US dollars for comparison between different countries. The exchange rates are determined by the flow of tradable commodities i.e. exports and imports only. Using purchasing power parity theory to express per capita income in place of traditional exchange rate improves the figure for developing countries such as India. Purchasing power parity theory determines exchange rates considering the flow of not just tradable commodities but also non-tradable commodities. Non-tradable commodities such as a haircut, car repair, dentist's treatment and all services which are provided at an arm's length distance are cheaper in India. Thus, the exchange rate moves favourably for them, once non-tradable commodities are also included in exchange rate calculations. Determining exchange rates this way better reflects the

buying potential and hence standard of living. (up to 3 marks) According to the estimates in The Economist (The World in 2009) the forecast per capita income of an Indian citizen is $1190 when measured using traditional exchange rates and $3270 using Purchasing Power Parity!

Better law and order conditions resulting in lower crime rate, political and economic stability, access to health and educational services, freedom of expression and speech, entertainment opportunities, supremacy of law, justice and good governance also contribute positively to standard of living but are not covered by per capita income. (up to 3 marks)

The national income figures do not include non-marketed items such as jobs done yourself (mother teaching her own child, a person painting the walls of his own house or repairing his own bike), so per capita income does not truly reflect living standards (up to 2 marks). In developing countries, poor literacy rate, poor tax culture, low provision of information technology results in a large size of non-documented (grey/parallel/underground) economy, so per capita income of these countries often understates living standards (up to 2 marks).

Alternatively, standard of living may be measured using Net Economic Welfare (NEW) or the Human Development Index (HDI). (1 mark)

There is no denying the fact that countries whose citizens work for fewer hours and have more leisure time enjoy better living standards than those whose people work for longer hours to earn the same amount of income (1 mark). Likewise, people living in countries with healthier, cleaner environments experience a better standard of living than those forced to live in polluted and congested areas (1 mark). Net Economic Welfare (NEW) or Measured Economic Welfare (MEW) adds factors to per capita income which improve standard of living such as leisure time and deducts factors that reduce quality of life e.g. negative externalities arising from polluted environments. So, mathematically, MEW/NEW is per capita income + leisure – negative externalities (up to 2 marks)

One may still be forced to employ per capita income as an indicator of living standards rather than NEW as assigning exact monetary values to leisure time and negative externalities is a difficult task (1 mark).

Human Development Index measures national socioeconomic development based on measures of life expectancy at birth, educational attainment and adjusted real per capita income. Developed economies where most of the people have access to better educational opportunities and medical care are likely to have a better standard of living than reflected by per capita income. (up to 3 marks)

5. (J07/04/4)

Some people say they are better off living in a rural area, where there is less congestion and pollution. Others prefer cities for the employment and the variety of leisure activities available.

If there are such differences of opinion of living standards in one country, is there ever any chance of accurately comparing living standards between countries? [25]

For knowledge, understanding and application of methods which can be used to measure living standards (up to 8 marks)

The most commonly used method is per capita real income (1 mark), which is the ratio of national income and population adjusted with price level (1 mark)

The other method is human development index (HDI) (1 mark), which has three aspects i.e. per capita income, adult literacy and life expectancy (1 mark)

Another method is Net Economic Welfare (NEW) (1 mark), which is per capita income plus leisure minus the monetary value of negative externalities (1 mark)

Usually gross domestic product is used for better comparison between countries, as different countries use different methods to calculate depreciation (1 mark)

For better comparison over the years, the value of national income is deflated to adjust it with inflation (1 mark)

Countries that spend more on education, health facilities and infrastructure are likely to have higher HDI (1 mark)

For analysis of these methods measuring living standards (up to 12 marks)

Analysis of per capita income (up to 8 marks)

Per capita income indicates the (average) affordability of buying more nutritional food, getting better medical care and quality education, leading to better living standards. However, this method has certain flaws and inaccuracies, such as:

The average is influenced by extreme figures and does not highlight the way income is distributed (1 mark). The figure of national income may not be reliable, as many people conceal income to evade taxes (1 mark), lack of documentation (1 mark), incompetency of the staff collecting information (1 mark), the presence of grey market (1 mark).

Countries that spend a greater part of their income on defense, investments and repayment of loans have lower living standards than reflected by per capita income (up to 2 marks). Countries importing more have better living standards than those that have trade surplus (1 mark). The explanation of purchasing power parity and its impact on the accuracy of per capita income to indicate living standards (up to 2 marks).

Analysis of qualitative methods (up to 8 marks)

HDI is a superior method as it not only considers the purchasing power of citizens (per capita income), but also how knowledgeable people are to use that purchasing power to maximize their welfare (adult literacy) and the ability to enjoy the goods and services they can purchase (health / life expectancy index) (up to 3 marks).

NEW is a better method as, in addition to per capita income, it takes into account leisure (which improves living standards) and negative externalities (which lowers living standards) (up to 2 marks).

For evaluation of the accuracy of these methods (up to 5 marks)

Per capita income is a quantitative method (1 mark), and thus provides more reliable information about living standards (1 mark).

The qualitative methods such as HDI and NEW may provide more reliable information about living standards (1 mark). However, they are harder to calculate (1 mark) as assigning an accurate monetary value to leisure and negative externalities is difficult (1 mark).

6. (J12/43/6a)

Population is increasing more rapidly in developing countries that can least afford it if they wish to encourage economic growth.

(a) What are the main characteristics of a developing country? [12]

Poor Human Development Index (HDI) i.e. low life expectancy, low literacy rate and low per capita income

High external debt and high national debt to GDP ratio

Low capital-labour ratio

Low and fluctualting terms of trade

High trade deficit

High population growth

High unemployment

High percentage of rural population

Low living standards

High dependency ratio

Low saving ratio

Students will get level 4 / full marks if they explain and develop the above characteristics. A list like approach will win them a maximum of 6 marks.

7. (J12/43/6b)

If a developing country wishes to become developed, the main aim of its government should be to control the growth of its population. Discuss this opinion. [13]

Analysis of government policies to develop an economy (up to 9 marks)

Analysis of the impact of controlling population growth to develop an economy (up to 6 marks)

Controlling the rate of population growth increases participation rate and reduces the dependency ratio, leading to high per capita income (up to 3 marks).

Lower population growth allows governments to devote more resources for the education and health of its citizens, making their population healthier and more educated, leading to higher productivity and an outward shift in PPC (up to 3 marks).

Analysis of the impact of alternative policies for developing an economy (up to 6 marks)

Governments, instead of focusing only on controlling population growth, may use supply side policies to improve efficiency of the work force by providing incentives and raising competition. Increased spending on education and training, improving technology, better infrastructure, cheaper and uninterrupted provision of utilities, lowering interest rates, deregulation, privatization and reducing the role of government enhance the production potential of the economy and shift PPC rightward (up to 3 marks).

To develop an economy, governments may use expansionary fiscal policy (higher government spending or lower taxes) and/or loose monetary policy (higher money supply / lower interest rates) to inject demand and create employment opportunities. Higher employment improves living standards and raises per capita income (up to 3 marks).

Evaluation of government policies to develop an economy (up to 4 marks)

There is a long time lag as investment in education and training and/or attempts to control population growth may take years or even decades to reflect the impacts (up to 2 marks).

Decreased population growth may reduce the availability of labour, making it expensive, which will be discouraging for both domestic and foreign investors. Economic growth may actually slow down (up to 2 marks).

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UNIT 7

Equilibrium Income, Keynesian Multiplier

A Level
Economics
Topical Paper 4

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Syllabus 2019 –21

MJ06/P04/Q6a
MJ06/P04/Q6b
ON12/P41/Q5a
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MJ10/P41/Q6a
MJ15/P41/Q6a
MJ10/P41/Q6b
MJ15/P41/Q6b
ON13/P41/Q4a
ON13/P41/Q4b
ON14/P42/Q5a
ON14/P42/Q5b
MJ15/P43/Q7a
MJ15/P43/Q7b
ON13/P42/Q5b

UNIT-7 EQUILIBRIUM INCOME, KEYNESIAN MULTIPLIER

1. (J06/04/6a)

(a) Explain how changes in interest rates might influence investment. [10]

Investments are of three types:

-New fixed capital formation, such as new machinery and equipment

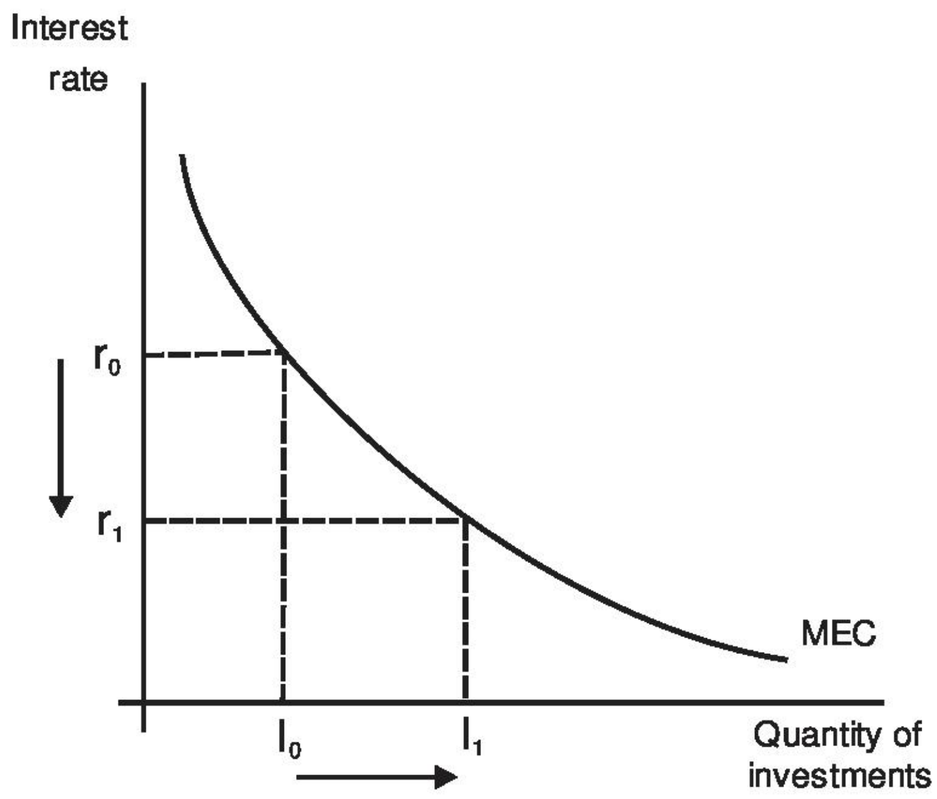
-Increases in inventories and stocks i.e. raw materials prior to use or finished goods prior to sale

-New constructions

Lower interest rates reduce the cost of borrowing and encourage borrowing for consumption and investment purposes. Lower interest rates reduce the opportunity cost of investment and encourages firms to borrow and invest more. Reduced interest rates increase the discounted value of a project, converting projects that were earlier not feasible into feasible ones.

Marginal efficiency of capital (MEC) is a downward sloping curve, showing the feasible projects in a descending order. MEC shows the expected rate of return of a project.

A firm will undertake only those projects whose MEC (expected return of the project) is at least equal to the interest rate (cost of borrowing). A decreased interest rate from r_0 to r_1 raises the quantity of investment from I_0 to I_1.



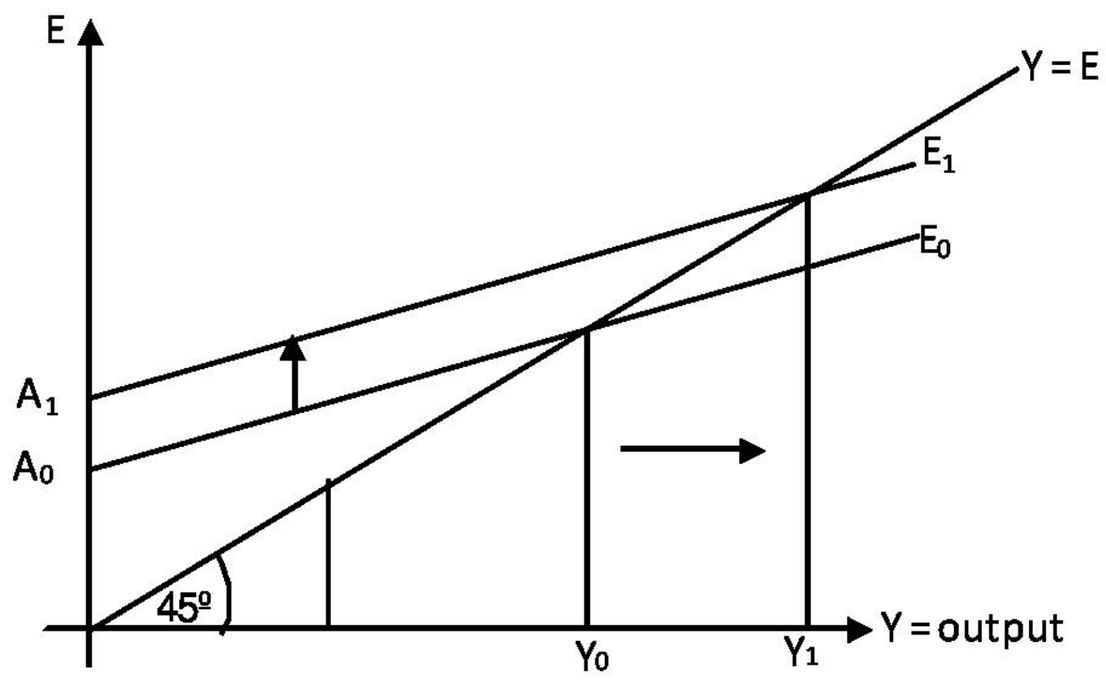
Decreased interest rates reduce the reward for saving and encourage consumers to borrow and consumer more. The increased consumption, especially of high priced items, such as houses and automobiles, injects demand into the economy and encourages firms to expand their production capacity to meet the rising demand. This leads to more investment.

2. (J06/04/6b)

(b) 'If investment increases it will cause an increase in output. If output increases it will cause an increase in investment'. Discuss whether both these statements can be true. [15]

Impacts of increase in investment on income through multiplier process (up to 6 marks)

Increase in investments injects demand into the economy and shifts AD rightward, leading to a larger increase in national income / output (1 mark) because of autonomous expenditures multiplier (1 mark). The multiplier is the inverse of the marginal propensity to save/withdraw (MPS), and as MPS is always a fraction, its inverse always exceeds unity (1 mark). The increased investment expenditures result in a series of income streams (1 mark), leading to a larger increase in national income / output. As shown in the following diagram, increase in investment expenditures shifts expenditure function from E_0 to E_1 and national income / output from Y_0 to Y_1. The increase in national income / output is more than the increase in investment expenditures because of the multiplier process.



(up to 2 marks for the diagram)

Impacts of increase in output on investment through accelerator (up to 6 marks)

Increased output / income leads to higher consumption and encourages firms to expand production capacities to meet the rising demand (1 mark). The relationship between increased output / income and increased investment is known as the principle of accelerator (1 mark). Accelerator coefficient is either the ratio of change in investment and change in income OR the ratio of change in investment and change in consumption (1 mark).

$$\text{Accelerator coefficient} = \frac{\Delta \text{I}}{\Delta \text{Y}} \; or \; \frac{\Delta I}{\Delta C}$$

Net Investment (In) is the excess of Gross Investment (Ig) over depreciation. Machines have infinite life and need replacement every few years. The capital stock of an economy raises only when Ig exceeds depreciation i.e. In is positive. According to the accelerator theory, In is positive when output rises and In rises when output rises at an increasing rate (up to 2 marks).

Accelerator coefficient is large i.e. firms significantly raise investments in response to an increase in income and consumption. This may happen in the following situations:

Firms operate at full capacities and must increase production capacities to satisfy fresh demand.

The stock of unsold goods is low.

Firms are certain that demand increase is permanent.

Factors of production are easily available.

Capital and labour are substitutable

Economic indicators are favourable and show stability and growth.

Government policies are investment and business friendly.

Interest rates are low.

(up to 3 marks)

3 marks for the Conclusion:

Both statements can be true at the same time as increased investments lead to greater output can be explained through multiplier process, and increased output induces greater investment can be understood through the principle of accelerator. However, the impact of increased investment on output depends on the size of the multiplier. In an open economy, where there is greater tendency to import goods or in countries where taxes and savings are high, the multiplier will be smaller and increased investment will lead to a smaller increase in output. The impact of increased output on investment also depends upon the economic and political conditions and increased output induces more investments if investors have access to the required factors of production and are confident about the future.

3. (N12/41/5a)

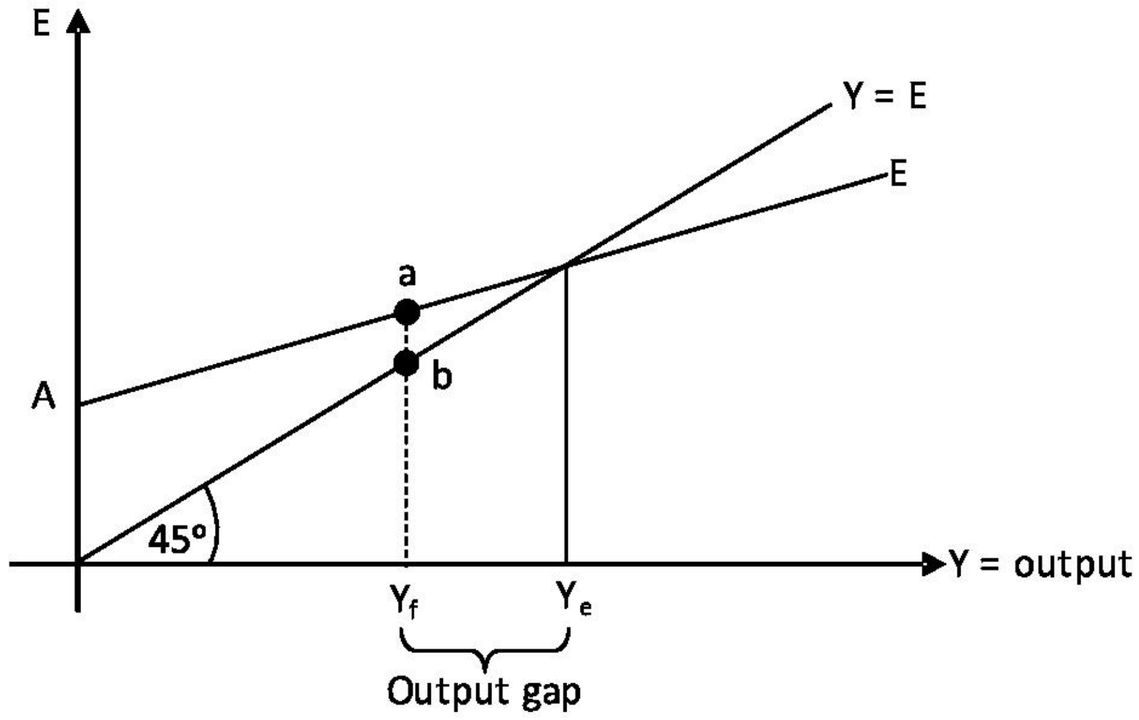
Explain what is meant by an inflationary gap. **[12]**

For knowledge and understanding of inflationary gap (up to 6 marks)

Inflationary gap is the vertical distance (1 mark) between 45 degree line and expenditures function (1 mark) at the level of full employment (1 mark). Inflationary gap arises when the equilibrium income is above the full employment level (1 mark). It measures the amount by which aggregate expenditures exceed income (1 mark) and triggers demand pull inflation / inflationary trends (1 mark).

For application with the help of a properly labelled diagram (up to 6 marks)

3 marks for the diagram



3 marks for explaining the diagram such as

Equilibrium income is determined by the intersection of 45 degree line and expenditures function (1 mark), which is Y_e in the diagram. Full employment is at Y_f and the vertical distance between the 45 degree line and expenditures function at this level indicates the inflationary gap (1 mark). The gap between full employment (Y_f) and equilibrium income is known as output gap (1 mark).

4. (N12/41/5b)

Discuss the effectiveness of the policies a government might use to reduce an inflationary gap. [13]

For an analysis of government policies to reduce an inflationary gap (up to 7 marks)

For an analysis of Fiscal tools to fill the inflationary gap (up to 4 marks)

The government may decrease government spending (G) (1 mark) and/or raise Net Taxes (T) (1 mark) to reduce an inflationary gap. The government spending should be decreased exactly by the size of inflationary gap to completely fill the inflationary gap (1 mark). However, taxes should be raised by a higher amount than the size of the gap (1 mark), as higher taxes reduce disposable income and affect both consumption, which is a part of aggregate demand, and saving (1 mark). So, increased taxes have a smaller effect on aggregate demand than lowering government spending (1 mark).

For an analysis of Monetary tools to fill the inflationary gap (up to 4 marks)

The government may decrease the supply of money or raise interest rates (1 mark) to decrease aggregate demand and reduce the inflationary gap. Interest rates are a reward for savings (1 mark) and higher interest rates increase savings and result in less consumption (1 mark). Interest rate is a cost of investment (1 mark) and higher interest rates decrease investments (1 mark). Decreased consumption and investment reduce the aggregate demand and help reduce the inflationary gap (1 mark).

For an analysis of Exchange Rate policies to fill the inflationary gap (up to 4 marks)

Exchange rate should be raised / revalued (1 mark) to reduce the gap. Higher exchange rate makes exports expensive and imports cheaper (1 mark), resulting in lower net exports (1 mark) and hence lower aggregate demand (1 mark), which will reduce / fill the inflationary gap.

A correctly labelled diagram that shows a downward shift reducing the inflationary gap or completely filling it may be given up to 2 marks.

For evaluation (up to 4 marks)

Fiscal policy is more effective as it is easier to calculate the required change in government spending and/or taxes to fill the inflationary gap (1 mark). The effect of an increase in interest rates on consumption and investments is uncertain as it depends on how responsive consumption and investment are to an increase in interest rates (1 mark). Fiscal policy, however, may not be effective, as lower government spending decreases the borrowing requirements of the government, resulting in lower interest rates, which may increase consumption and investment, reducing the effect of decreased government spending (up to 2 marks). Fiscal policy means approval of the parliament and may take longer (1 mark) than a change in interest rates, which can be made relatively quickly (1 mark). A contractionary fiscal policy is more effective when backed by a contractionary monetary policy (1 mark). The exporters may resist a government move to raise exchange rates (1 mark) and only governments with a trade surplus and high foreign reserves can use the option of increasing the exchange rate (1 mark).

5. (J10/41/6a), (J15/41/6a)

(a) A firm undertakes a major investment. Analyse why in a closed economy without a government the increase in national income from this investment might be higher than in an open mixed economy. [12]

In 2013, a new aircraft, the Boeing 787 Dreamliner, was assembled in the United States (US). United Airlines, an American private company, ordered 50 of these aircraft, each costing over US$200 million.

(a) Imagine that the US was a closed economy with no government intervention. Analyse why the increase in national income from this investment in new aircraft might be different than if it were an open, mixed economy. [12]

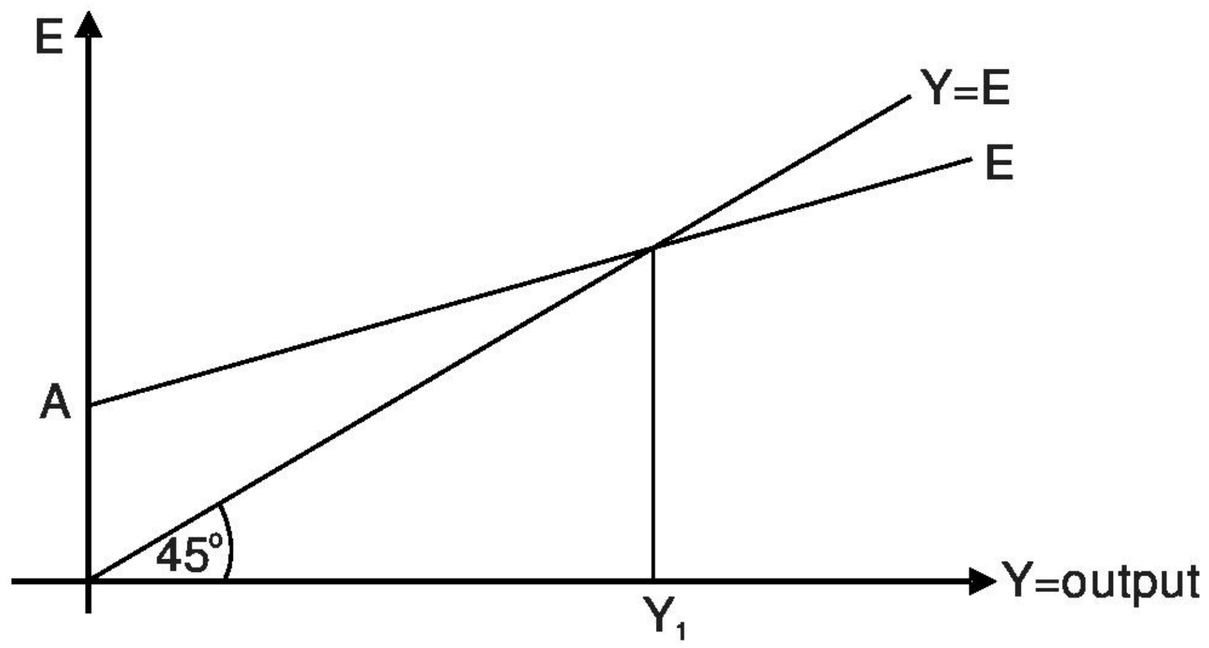
MS

Analysis and explanation of the working of the multiplier showing the link between investment and national income, recognising that there would be no leakages to taxes and imports in the closed economy. However, it may also be the case that if there were taxes the proportion of the taxation spent may be higher than the proportion of the private income spent.

Suggested Answer

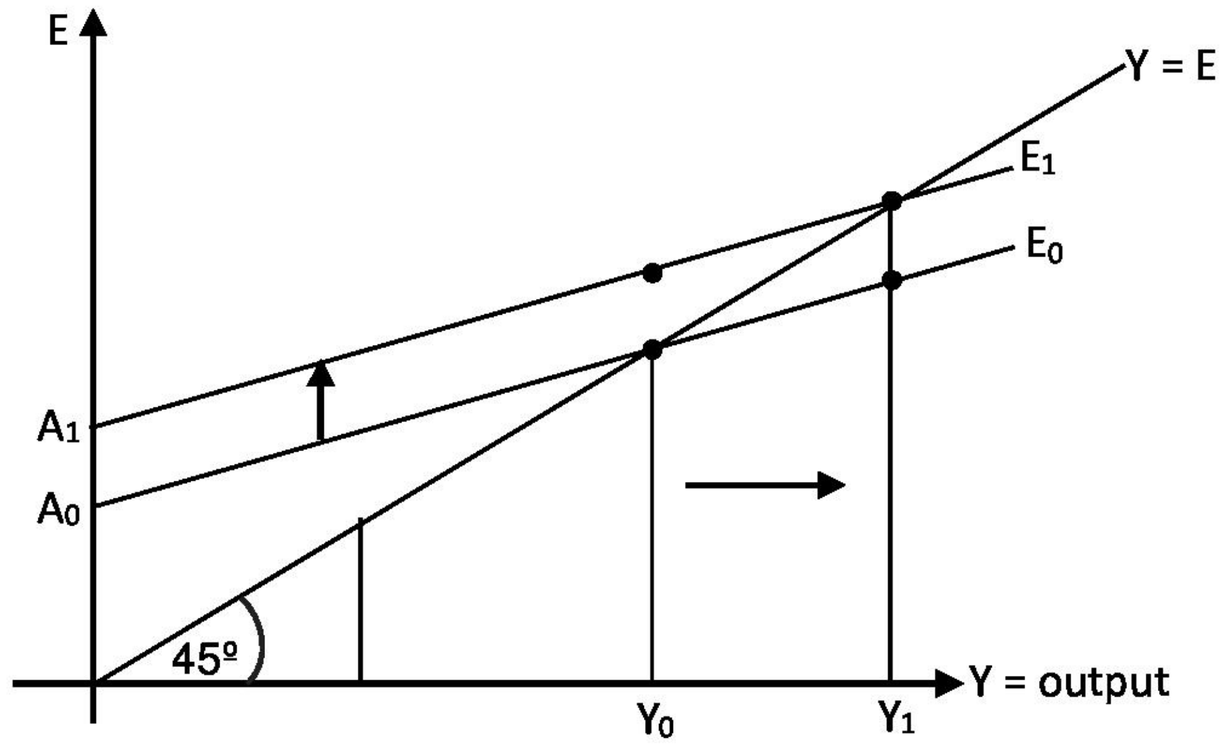
Aggregate Expenditures (AE) in a closed economy without government equal consumer expenditures (C) and investment expenditures (I).

Equilibrium income is that level of income/output where Aggregate Expenditures (E) equal National Income (Y). Graphically the intersection of expenditures function and 45º line determines equilibrium income. The vertical intercept of expenditure function shows autonomous expenditures (A) whereas its slope is marginal propensity to spend (MPE). Marginal propensity to spend is the fraction of an added £ in income that is spent.



In a circular flow of national income, expenses of one become the income of others. Increased income induces greater spending, leading to a series of income flows. For example, if firm A raises investment spending, it becomes the income of B, inducing it to raise its spending as well, which becomes the income of C, and so on. Thus, a change in expenditures is multiplied by the expenditure multiplier and results in a larger change in national income. The numerical value of the expenditure multiplier is the inverse of marginal propensity to withdraw (mpw), since, at every successive stage, a part of income is withdrawn in the form of savings, taxes and imports. Marginal propensity to withdraw (mpw) equals marginal propensity to save (mps), marginal propensity to tax (mpt) and marginal propensity to import (mpm). The higher these withdrawals, the lesser the impact of increased expenditures on national income. In a closed economy without government, there are no taxes and imports, so withdrawals are only in the form of savings, thus, the expenditure multiplier in a closed economy $\left(\frac{1}{\text{mpw}}=\frac{1}{\text{mps}}\right)$ is larger than the multiplier in the case of an open mixed economy $\left(\frac{1}{\text{mpw}}=\frac{1}{\text{mps}+\text{mpt}+\text{mpm}}\right)$. Thus, the impact of increased expenditures is larger in a closed economy than in an open mixed economy.

Increased investment expenditures shift expenditure function upward (from E_0 to E_1) and raise national income from Y_0 to Y_1. The increase in national income exceeds the increase in expenditures as the change in investment is multiplied by the autonomous expenditure multiplier, which is the inverse of MPS. Since MPS is always a fraction, its inverse exceeds 1, leading to a higher change in national income.



Aggregate Expenditures (AE) in a complete economic model i.e. an open economy equal consumer expenditures (C), investment expenditures (I), Government expenditures (G), Export revenues (X) minus import expenditures (M).

The value of expenditure multiplier in an open economy is $\frac{1}{mps+mpt+mpm}$, which is less than the value of multiplier in a closed economy without government. Thus, the increased investment expenditures bring a relatively smaller increase in the national income, as a part of the additional income is used in the payment of taxes and/or on the purchase of imports, reducing the impact on the local economy.

6. (J10/41/6b), (J15/41/6b)

(b) Discuss the policies that a government might use to influence the level of investment in an economy. [13]

(b) Discuss the policies that a government might use to influence the level of investment in an economy. [13]

MS

The government might wish to influence the investment by using fiscal or monetary policy. It might also influence the investment of the private sector by regulation. It can use taxes or subsidies, interest rates, regulations or controls.

Suggested Answer

Analysis of the policies (up to 9 marks)

Investments are of three types:

- New fixed capital formation
- Increase in inventories/stocks
- New construction

The government may use monetary policy to influence the level of investment in an economy i.e. it may raise money supply or reduce interest rates to encourage investments. Lower interest rates reduce the cost of borrowing and increase the net present value, converting projects that were earlier not feasible into feasible ones.

Marginal efficiency of capital (MEC) is a downward sloping curve, showing the feasible projects in a descending order. The intersection of interest rate and MEC determines the level of investment in an economy and a decrease in interest rates raises investments.

Decreased interest rates reduce the opportunity cost of consumption, leading to higher consumption / aggregate demand, encouraging firms to invest more.

The government may also use fiscal policy to influence the level of investment. A reduction in (income) taxes increases post tax profits, and encourages firms to invest more. Reduced taxes raise disposable income, leading to higher consumption, and encouraging firms to invest more.

The government may spend more money on improving infrastructure, which reduces production cost, raising the profitability of businesses, encouraging them to invest more. Increased government spending raises aggregate demand, which also encourages firms to produce more.

The government can make its policies transparent, consistent and business-friendly, which reduces the uncertainty associated with investments and encourages more investments. Better law and order conditions, low crime rate, political and economic stability, and legal framework that protects interests of businesses are essential to encourage investments, thus, the role of the government is key to influencing investments.

Evaluation of the policies (up to 4 marks)

Government policies are less effective in increasing investments when the morale of the consumers / producers is low, there is lack of political stability, a fear of war, poor law and order situation. The investors may not invest more even at low interest rates if they expect a poor rate of return on their investments. Reduction in interest rates will be effective in influencing investments only in the long run, as there is a time lag between reducing interest rates and high investments. The interference of the government in economic matters could also result in misallocation of resources, as governments are often inefficient and increased government expenditures may not bring the desired results.

7. (N13/41/4a)

In 2011, an economic advisor recommended that low interest rates in a country should continue because of the uncertainty about the ability of the economy to grow. (Source: The Independent)

(a) Explain the possible link between interest rates and the economic growth of an economy. [12]

For knowledge and understanding of the link between interest rates and economic growth (up to 6 marks)

Interest rate is the opportunity cost of investment (1 mark) and lower interest rates increase investment (1 mark). Lower interest rates reduce the reward for saving (1 mark) and raise consumption (1 mark) and hence the aggregate demand (1 mark). Economic growth is an increase in national income (1 mark). Increased aggregate demand i.e. demand injection raises national income / accelerates economic growth (1 mark).

For application i.e. use of relevant diagrams and multiplier process to explain the link between interest rate and economics growth (up to 6 marks)

For a correctly labelled downward sloping Marginal Efficiency of Capital (MEC) explaining the link between lower interest rate and higher investment (up to 2 marks)

For a correctly labelled diagram (AD/AS diagram or income expenditures model) where a rightward shift in aggregate demand is resulting in a higher national income (up to 2 marks)

For explanation of the multiplier process i.e. a given change in aggregate demand results in a higher change in national income because of expenditures multiplier (up to 2 marks)

8. (N13/41/4b)

Discuss what other policies a government might use to encourage economic growth. [13]

Analysis of other policies (up to 9 marks)

Analysis of fiscal policy (up to 6 marks)

Expansionary fiscal policy may be used (1 mark) which is lower taxes and/or higher government spending (1 mark). It will inject demand into the economy (1 mark), leading to higher aggregate demand (1 mark) and a larger increase in national income (1 mark) because of expenditures multiplier (1 mark).

Analysis of other tools of monetary policy and/or other policies such as supply side policies (up to 6 marks)

Supply side tools such as education and training, better infrastructure, investment friendly environment, lower taxes (up to 2 marks for identifying supply side tools) which provide incentive to work and investment (1 mark) will help shift the production possibility curve and/or potential output towards the right (1 mark).

Instead of lowering interest rates, the government may raise the supply of money through open market operations and/or relaxing conditions on banks to give loans (up to 2 marks).

For evaluation of different policies (up to 4 marks)

Expansionary fiscal policy may trigger inflationary trends (1 mark) or its effect may be crowded out as the budget deficit forces government to borrow more. This may raise the interest rate, causing investment and consumption to decrease, thus reducing the effectiveness of expansionary fiscal policy (up to 2 marks). There can be a time lag as the impact of lower taxes or increased spending of the government may be felt by the economy after a long duration, reducing its ability to tackle economic challenges (1 mark). The relaxation on banks for lending money can be beneficial in accelerating economic growth if investors' confidence is high and a strong demand for bank loans exists (1 mark) and commercial banks are operating near their cash ratios (1 mark).

9. (N14/42/5a)

Identify two government macroeconomic aims and analyse how a boom will bring beneficial changes for consumers and producers. [12]

Lord Skidelsky, Keynes's biographer, stated that Keynes believed that 'to cut government spending was completely the wrong policy in a slump'. (Source: The Times.)

For knowledge and understanding of two macroeconomic objectives and a boom (up to 4 marks)

Identification of two macroeconomic objectives such as economic growth, reducing unemployment, price stability, balancing balance of payment, lower inflation (up to 2 marks, 1 mark for each objective identified)

For example: Governments aim to reduce inflation to overcome the uncertainties caused by fluctuating prices OR governments aim to accelerate economic growth to reduce poverty / increase employment opportunities

For knowledge and understanding of boom (up to 2 marks)

A boom is an economic period of time that is characterized by rising incomes and rising employment opportunities / reduced unemployment.

For analysis of benefits and drawbacks of boom for consumers and producers (up to 8 marks)

For analysis of the benefits and drawbacks of boom for the consumers (up to 5 marks)

Unemployment decreases /employment increases (1 mark). Per capita income of consumers increases (1 mark). Their standard of living improves (1 mark) as they can spend more on better quality food, health, education and other items (1 mark). They access a greater variety of goods (1 mark). However, inflation may increase, which may increase the cost of living (1 mark). Producers may speed up the production to meet the growing demand, which may affect the quality of the product for the consumers (1 mark). The environment may get polluted, and negative externalities, such as road congestion, may harm the quality of life for consumers (1 mark).

For analysis of the benefits and drawbacks of boom for the producers (up to 5 marks)

The markets for producers expand, allowing them to sell on a larger scale (1 mark). This may reduce the per unit cost and raise profit margins for the producers as they may exploit economies of scale (1 mark). The revenues and profits of producers increase, especially of those who produce normal goods (1 mark). However, firms may experience a shortage of workers, leading to higher wages and higher unit labour cost (1 mark). The productivity of labour may also fall because of diminishing returns (1 mark).

10. (N14/42/5b)

Discuss why cutting government spending might be considered to be the wrong policy in a slump. [13]

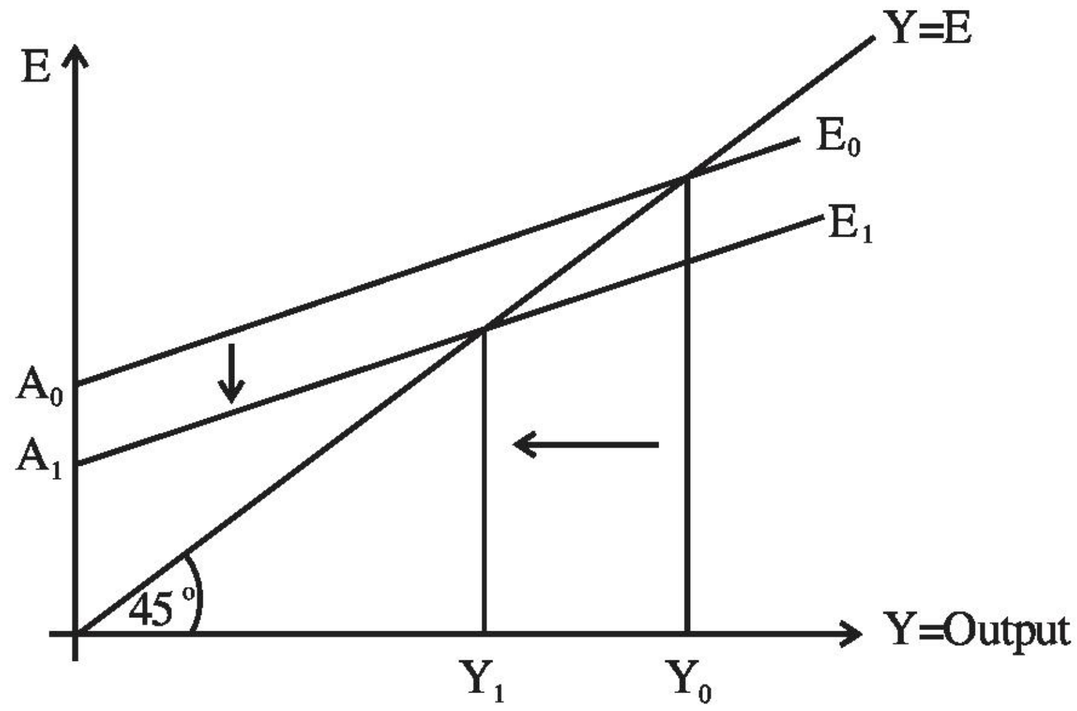
For knowledge and understanding of slump (2 marks)

Slump is an economic period of time that is characterized by falling income/output, falling prices and rising unemployment.

For analysis of impacts of deceased government spending on national income and price level through multiplier process (up to 7 marks)

Deceased government spending withdraws demand (1 mark) and shifts Aggregate Demand /Aggregate expenditures curve downwards/leftward (1 mark). It results in lower income or lower price level (1 mark). The decrease in income is larger than the decrease in government spending (1 mark) because of the expenditures multiplier (1 mark), which is the inverse of marginal propensity to save/withdraw i.e. mps or mpw (1 mark).

A correctly labelled diagram showing the impact of decreased spending of the government on equilibrium national income (up to 2 marks)



For evaluation (up to 4 marks)

Deceased government may widen the deflationary gap (1 mark) and intensify slump (1 mark) if producers reduce output as a reaction to lower Aggregate Demand (1 mark). However, decreased government spending may help to neutralize the inflationary trends (1 mark), which may encourage investments (1 mark) and help the economy to come out of slump (1 mark). Decreased government spending reduces the role of the public sector and gives greater space to a more efficient private sector, which may shift PPC outward in the long run (up to 2 marks).

11. (J15/43/7a)

One macroeconomic indicator is the level of investment.

(a) What determines the level of investment? [12]

Investment includes new fixed capital formation, addition in stocks and new constructions (1 mark).

Interest rate is the opportunity cost of investment (1 mark) and an increase in interest rate lowers the net present value of investment (1 mark), leading to reduced investment (1 mark). Higher interest rate makes borrowing expensive and firms become reluctant to invest (1 mark). Higher interest rates also reduce consumption and hence AD, discouraging firms from investing (1 mark).

Political and economic stability, transparency of government policies, availability of infrastructure, the law and order situation, the role of bureaucracy, the general pessimism or optimism in the society, the system of taxation determine the level of investment (up to 4 marks for a list like approach or 2 marks for a properly explained determinant of investment).

Political and economic stability improves the confidence of investors and allows them to budget and plan easily, which facilitates investment (up to 2 marks).

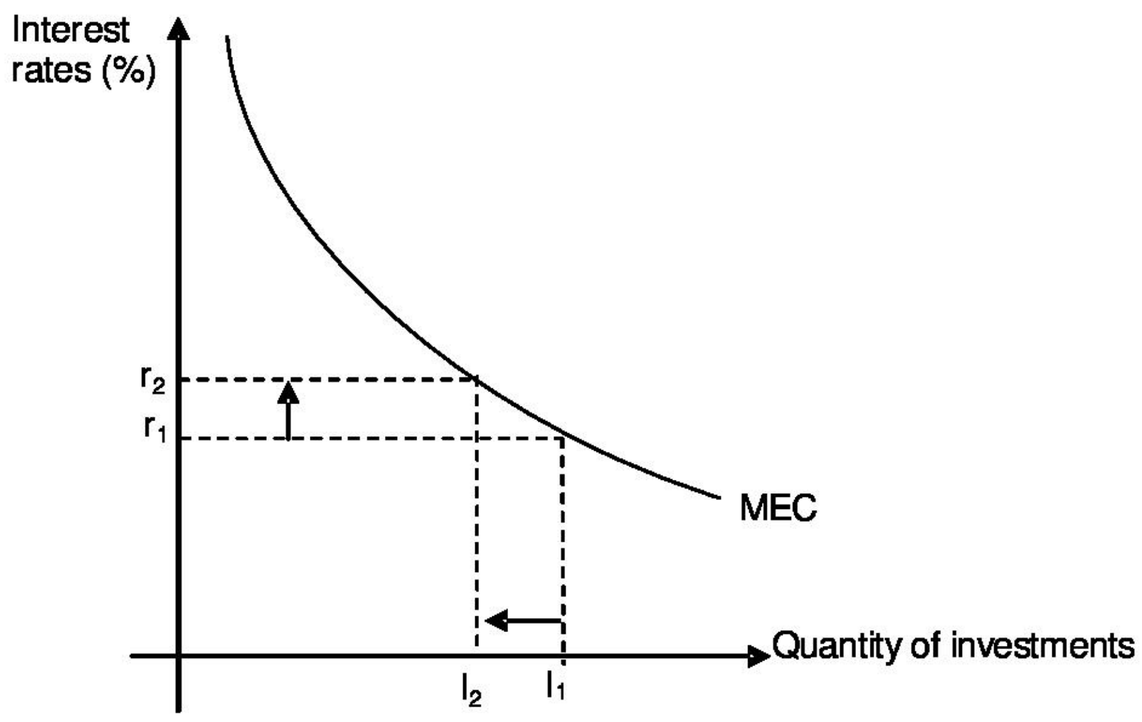
Transparency of government policies simplifies the procedures to set up and run a business, making investment decisions easier (up to 2 marks).

Infrastructure, such as roads, airports, motorways, uninterrupted and economical provision of utilities, reduces the cost of business and encourages investments (up to 2 marks).

The law and order situation provides a sense of security and prompts investors to expand their businesses (up to 2 marks).

A friendly tax policy raises the post-tax income of businesses. Low taxes raise disposable income, leading to higher AD and higher pre-tax income. This encourages investment (up to 2 marks).

Marginal Efficiency of Capital (MEC) lists down all investment projects in a descending order as shown in the following diagram. Projects with MEC at least equal to interest rate are considered feasible. An increase in interest rate from r_1 to r_2 decreases investment from I_1 to I_2 (up to 3 marks).

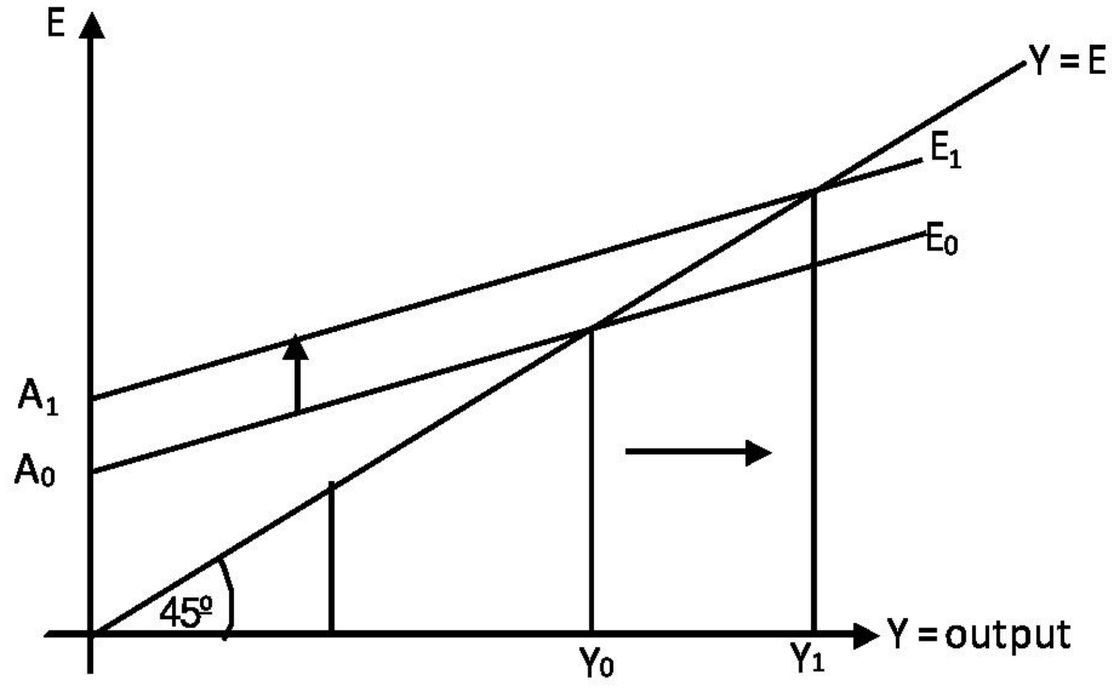


12. (J15/43/7b)

Discuss how a large increase in the level of investment may affect an economy and whether such an increase is always beneficial. [13]

Impacts of increase in investment on income through multiplier process (up to 4 marks)

Increase in investments injects demand into the economy and shifts AD rightward, leading to a larger increase in national income because of autonomous expenditures multiplier (1 mark). The multiplier is the inverse of the marginal propensity to save/withdraw (MPS), and as MPS is always a fraction, its inverse always exceeds unity (1 mark). The increased investment expenditures result in a series of income streams (1 mark), leading to a larger increase in national income. As shown in the following diagram, increase in investment expenditures shifts expenditure function from E_0 to E_1 and national income from Y_0 to Y_1. The increase in national income is more than the increase in investment expenditures because of the multiplier process.



(up to 2 marks for the diagram)

Analysis whether increase in investment is beneficial or not (up to 9 marks)

Analysis that increase in investment is beneficial (up to 5 marks)

Increase in income helps fill / reduce the deflationary gap if the economy is operating below full employment (1 mark). This reduces unemployment and helps to accelerate economic growth (1 mark). The national income and per capita income increases (1 mark) and living standards improve (1 mark). Government expenditures on unemployment allowances decrease and tax revenues increase, allowing governments to spend more on health and education (1 mark).

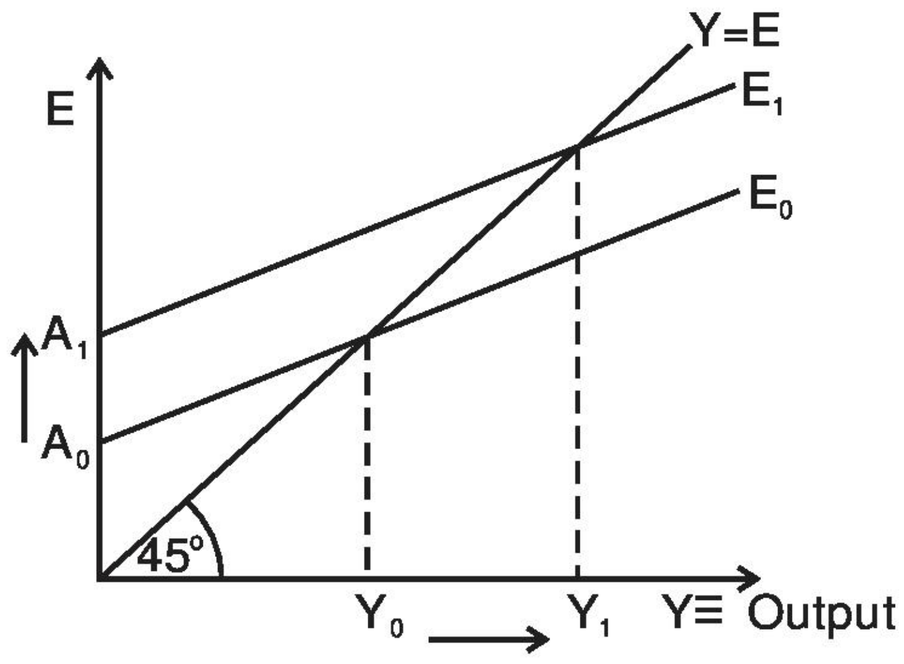
Analysis that increase in investment is not beneficial (up to 5 marks)

However, increased AD may be inflationary if the economy is operating at or above full employment (1 mark). An inflationary gap may be created in such a situation. A comparatively higher inflation rate makes local goods less price competitive, both at home and abroad (1 mark). Higher income also results in higher import expenditures, leading to growing trade deficit (1 mark). The economic growth may also lead to greater income disparities (1 mark) and may also result in negative externalities, such as pollution and road congestion (1 mark). The resources may be used carelessly, leaving less or nothing for the future generations (1 mark).

13. (N13/42/5b)

Discuss whether the use of fiscal policy is the only effective means of stimulating economic growth. [13]

The expansionary fiscal policy intends to raise national income by raising public spending (G) and/or by lowering taxes. Higher government spending and lower taxes usually result in a budget deficit and injects aggregate demand into the economy. The rightward shift in aggregate demand, through a multiplier effect, leads to a larger change in national income as shown in the following diagram.



The increased public spending, particularly on infrastructure projects, creates employment opportunities and improves the demand as well as supply side of the economy, as better infrastructure not only raises aggregate demand, but also raises the productive potential of the economy.

However, expansionary fiscal policy is effective in raising real output and employment opportunities only if the economy has excess capacity and unemployed resources. In such a case, fiscal policy will help reduce the deflationary gap. However, for economies operating close to full employment, increased expenditures may widen the inflationary gap.

Financial and resource crowding out may also reduce the effectiveness of fiscal policy. Budget deficit, as a result of an expansionary fiscal policy, forces the government to borrow more from commercial banks and general public. It raises interest rates and crowds out interest sensitive expenditures such as consumer and investment spending, offsetting the effect of budget deficit. Thus, for fiscal policy to be more effective, it must be complemented with loose monetary policy. Expansionary fiscal policy also shifts resources from the more efficient private sector to a less efficient public sector, which may reduce the productive potential of the economy in the long run. This phenomenon is known as resource crowding out.

Unlike monetary tools, which have an effect only in the long run, fiscal policy helps to raise aggregate demand immediately and is more useful if the government wants an instant recovery.

The government may consider using supply side tools, such as education and training, reforms of labour market, deregulation and privatization, and shift of reliance from centralized decision making to demand and supply forces to raise the productive potential and economic growth. The use of supply side policies will not only help raise economic growth, but will also help stabilize the price level. However, supply side tools need a lot of time for an effect and will be less useful if the economy needs an immediate recovery. Fiscal policy in such a situation could be more useful in instantly raising aggregate demand and restoring the confidence of consumers and investors.

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UNIT 8

Economics Policies, Unemployment & Inflation

Syllabus 2019 –21

ON14/P43/Q6a
ON14/P43/Q6b
ON13/P42/Q5a

A Level
Economics
Topical Paper 4

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UNIT-8 ECONOMICS PLOICIES, UNEMPLOYMENT & INFLATION

1. (N14/43/6a)

It is suggested that the use of credit cards has resulted in huge debts as people spend far more than they earn.

(a) Explain whether the liquidity preference theory of the demand for money can be applied to the use of credit cards. [12]

MS

Explanation of transactions, precautionary, speculative demand. Transactions related to income, credit cards not related as money is spent without necessarily having been received. Precautionary – credit cards may reduce precautionary demand because future expense may be made not through money saved by through the credit card. The amount left for speculative may increase if left is used for transactions and precautionary. [12]

Suggested Answer

According to Keynes, people prefer liquidity and are willing to sacrifice interest streams for three reasons:

(i) transaction motives

(ii) precautionary motives

(iii) speculative motives

Transaction motive shows demand for money for regular and routine consumers and business requirements. Businesses experience a gap between making payments for purchase of raw materials, salaries etc. and receiving payments from sale of finished goods. Firms typically demand liquidity i.e. cash to bridge this gap.

Precautionary motive is the demand for money arising due to unexpected and emergency requirements. A change in market conditions for example, may delay sales of firms' products or payments from debtors and hence, increase the gap between making payments to suppliers and receiving sale revenues.

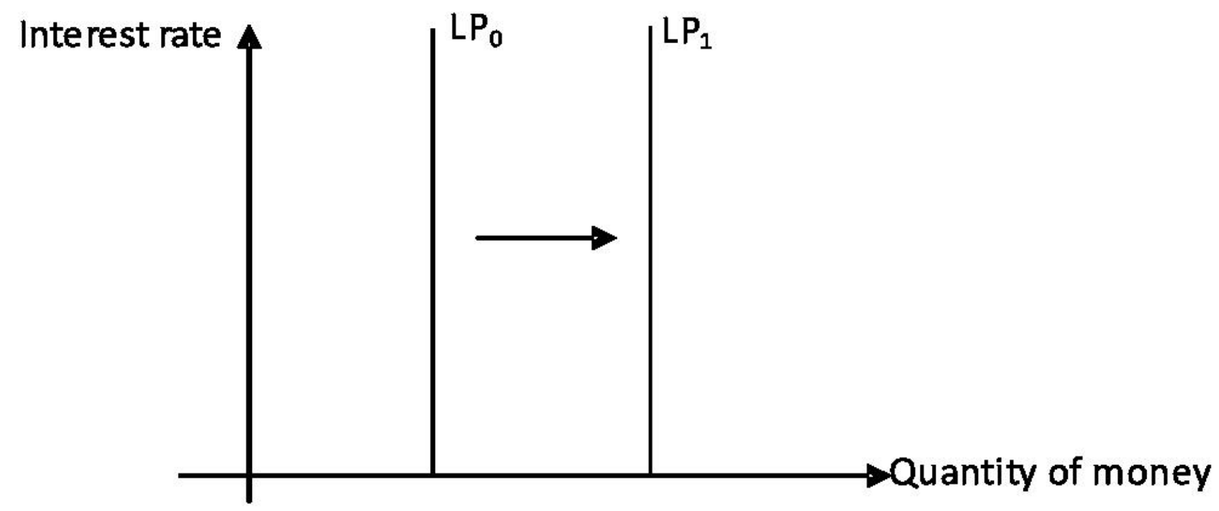
Demand for transaction and precautionary motive is the active portion of money demand, expected to be used immediately. It does not depend on the interest rate. However, increased income, increased price level and decreased popularity of credit cards all increase the demand for money and shift the 'demand for money' curve towards right.

Consumer with higher incomes and businesses with higher sales turnover are likely to demand more money for transaction and precautionary motives. At higher prices, households and firms have to demand more money for their routine and emergency requirements. Credit cards are money substitutes and their popularity decreases demand for transaction and precautionary motives.

Diagram 1 shows a straight vertical line representing demand for money for transaction and precautionary motives, implying that changes in interest rate do not influence money demand. The decreased popularity and acceptance of credit cards increases the demand for money and shifts its demand curve rightwards, as instead of credit cards, more money will be needed to finance routine and emergency / unforeseen expenses.

Diagram 1

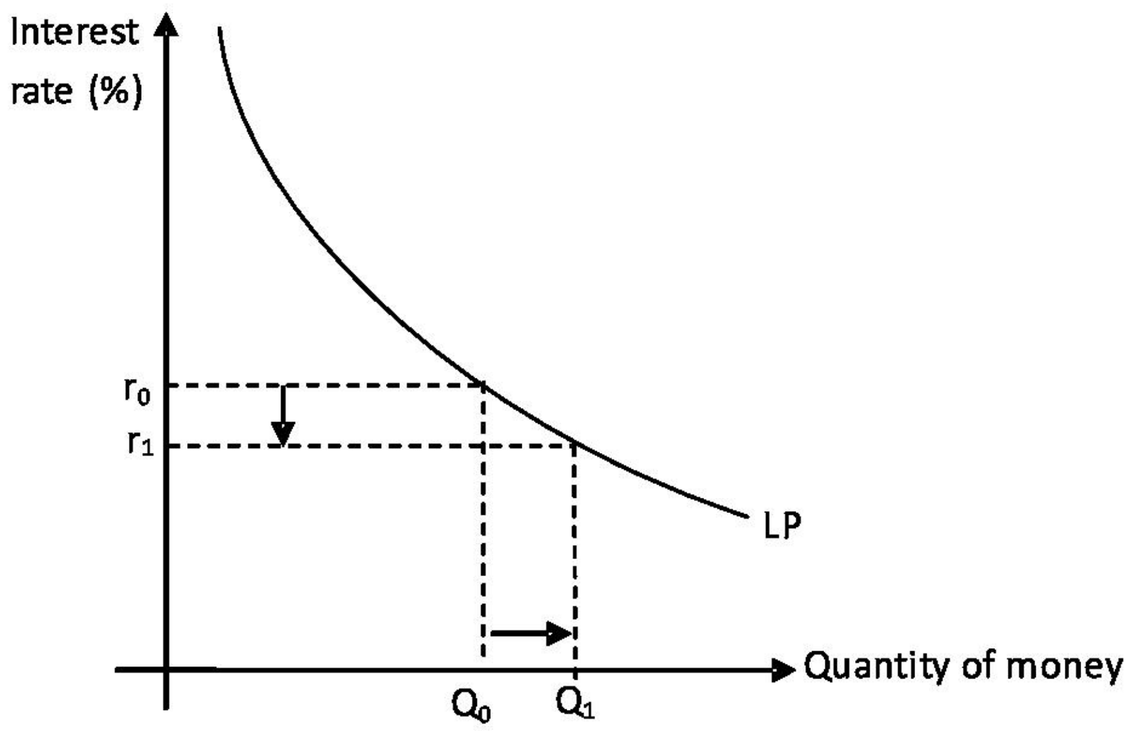
Demand for money i.e. Liquidity Preference (LP) for transaction and precautionary motives



Demand for speculative motives however moves inversely with interest rates, as in Diagram 2, decreased interest rate from r_0 to r_1 increases demand for money from Q_0 to Q_1. Money demanded for speculative motives is passive or idle since this part of liquidity is not likely to be used in near future.

Diagram 2

Demand for money (LP) for speculative motives



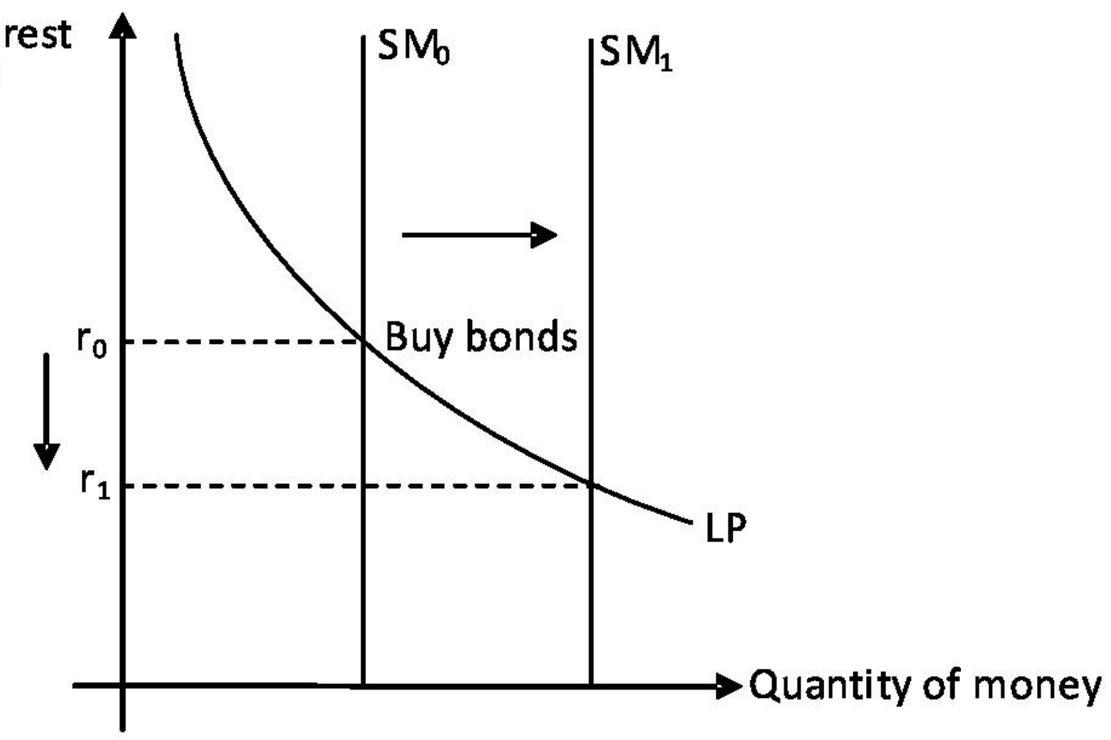
The amount left for speculative purposes may increase if credit cards become popular and less money is used for transactions and precautionary motives.

2. (N14/43/6b)

(b) Use the liquidity preference theory to discuss the possible consequences of an increase in the supply of money. [13]

Government's decision to raise money supply or credit creation by commercial banks shifts the supply curve for money from SM_0 to SM_1. Demand for money falls short of money supply at r_0 and extra liquidity encourages households to buy bonds, raising their prices. The market interest rate falls to r_1.

Diagram



The extent to which increased money supply reduces interest rates depends upon the elasticity of liquidity preference. The keenness of economic agents to convert extra liquidity into bonds will have a greater effect on interest rates than a situation where these economic agents will be slow in responding to increased money supply.

Decreased interest rates reduce the cost of borrowing and reward for saving. It encourages consumers and producers to borrow more, and raise consumer as well as investment spending, leading to increased aggregate demand. The demand injection may be reflationary i.e. raises real output if excess capacity and unemployed resources are available. However, it may trigger demand-pull inflation for economies operating at or above full employment. The extent to which lower interest rates raise consumer and investment spending depends upon the elasticity of demand. In case economic agents are confident, they will raise spending significantly if interest rate falls. However, the degree of responsiveness of spending towards a reduction in interest rate would be low if there is general pessimism in the society.

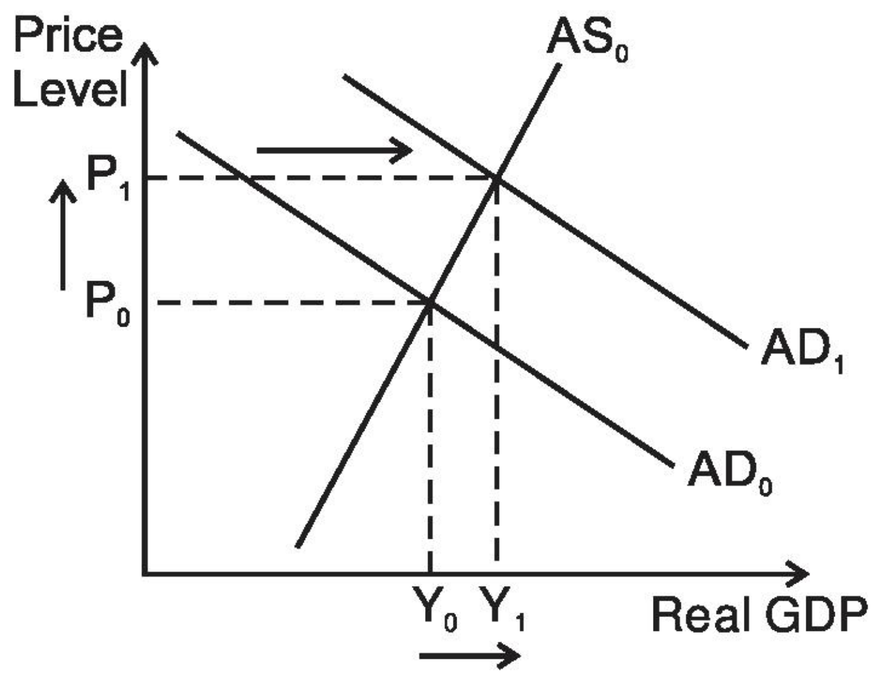
Decreased interest rates reduce rewards for saving in national currency, leading to greater financial outflow. The decreased demand and increased supply of national currency reduces exchange rate and may make locally produced goods more price competitive. This may help reduce trade deficit; however, net exports may not rise if inflation is triggered. A decrease in interest rates encourages more spending of locally made goods as well as of imports, so net exports may actually fall. Thus, the net effect on net exports is uncertain.

3. (N13/42/5a)

Explain, using the concept of the multiplier, the possible link between a fall in interest rates and an increase in national income. [12]

Expenditures multiplier shows the relationship between change in any component of expenditures and change in national income. Since a change in expenditures leads to a series of income flows in a model of circular flow of national income, the value of expenditures multiplier exceeds 1 and leads to a larger change in national income. For example, expenses incurred by individual "A" become the income of "B", prompting "B" to raise spending, which becomes the income of "C", inducing more spending by "C", and this process keeps going on. At every stage, a portion of income is withdrawn in the form of savings, and the smaller these withdrawals are, the larger will be the multiplier and greater will be the impact on national income of an increase in expenditures. The expenditures multiplier is 1/1-mpc and since mpc is always a fraction, 1/1-mpc will always be more than 1.

Interest rate is the cost of borrowing and the opportunity cost of investment. A fall in interest rate makes investments more feasible and leads to greater investments. Lower interest rates also reduce the reward for savings, encouraging households to save less and spend more. Increased consumer and investment spending inject aggregate demand into the economy and shift the aggregate demand curve towards the right. The increased aggregate demand, through the multiplier effect, causes a larger increase in national income and employment opportunities. However, reduction in interest rate may have a greater effect on investment in the long run as investors will take time in planning and executing new investment projects in response to a reduction in interest rate. The reduction in interest rate, alone, may not be effective in raising investment, as investors who are low in confidence and expecting a poor rate of return may not invest more even at a reduced interest rate. The increased consumer and investment spending may not be able to raise real output and will only be inflationary if excess capacity and unemployed resources are unavailable and the economy is operating close to full employment. Aggregate supply will be steeper in such a case, as shown in the following diagram and the increased aggregate demand has a greater effect over price level and a smaller effect over real output.



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Data Response

A Level
Economics
Topical Paper 4

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Syllabus 2019 –21

ON02/P4/Q1
MJ13/P42/Q1
MJ15/P43/Q1
MJ16/P43/Q1
MJ17/P41/Q1
ON13/P41/Q1
ON13/P42/Q1
ON14/P41/Q1
ON14/P42/Q1
ON11/P41/Q1
MJ13/P41/Q1
MJ16/P42/Q1
ON08/P4/Q1
ON14/P43/Q1
ON16/P42/Q1
ON17/P41/Q1
ON16/P43/Q1
MJ14/P42/Q1
ON16/P43/Q1
MJ14/P42/Q1

DATA RESPONSE

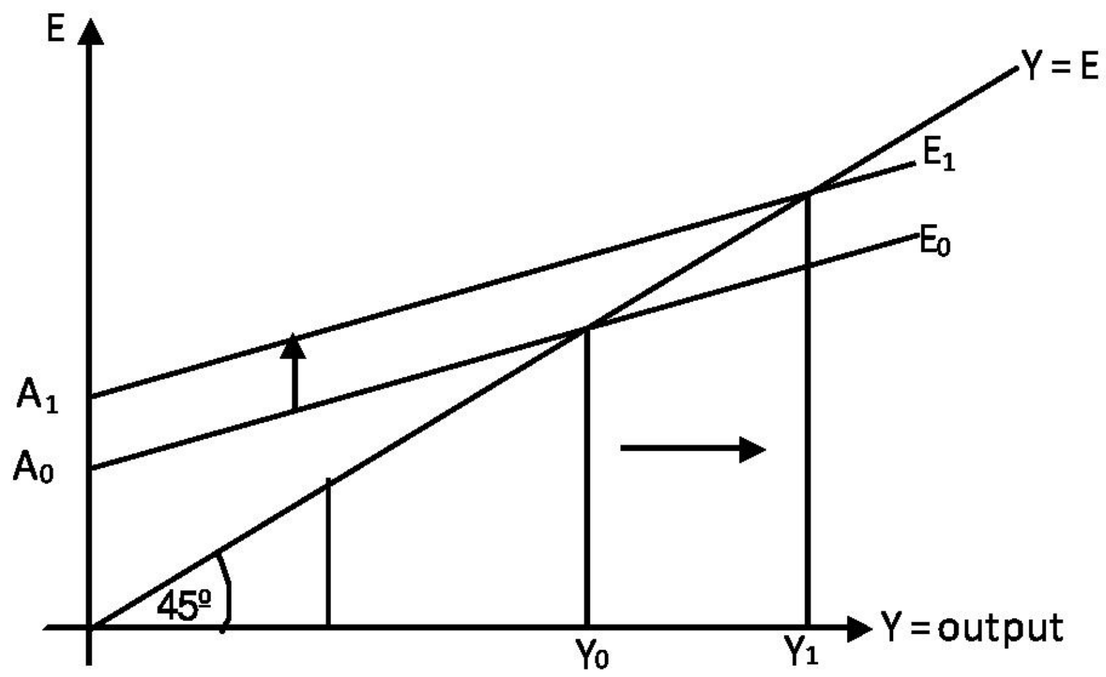
1. (N02/04/1)

Please note Question 1 has been removed from the question paper for copyright reasons.

(a) Fiscal tool mentioned in the extract is increased public spending or abolition of duties (1 mark). Monetary tool is low interest rates (1 mark).

(b) Malaysian currency is undervalued, which makes holidays, living and shopping cheaper in Malaysia, and might have encouraged more tourists (1 mark). The increased shopping opportunities in Malaysia, as all the big names in retailing are coming there, might have inspired more tourism (1 mark). The availability of designer brand names and excellent service in shops may also have contributed to more tourism (1 mark).
Note: 1 of the 3 reasons mentioned above, if properly explained, may get up to 2 marks.

(c) Increase in public spending injects demand into the economy and shifts AD rightward, leading to a larger increase in national income and accelerates economic growth because of autonomous expenditures multiplier (1 mark). The multiplier is the inverse of the marginal propensity to save/withdraw (MPS), and as MPS is always a fraction, its inverse always exceeds unity (1 mark). The increased public spending results in a series of income streams (1 mark), leading to a larger increase in national income and economic growth. As shown in the following diagram, increase in public spending shifts expenditure function from E_0 to E_1 and national income from Y_0 to Y_1. The increase in national income is more than the increase in public spending because of the multiplier process.



(d) Inflation is a persistent increase in price level, and reduces the real value of wages (1 mark). Real wages remain intact only if money wages rise in line with inflation (1 mark). Thus, workers in the manufacturing sector may demand higher money wages to restore the lost purchasing power (1 mark). The firms may also agree to the workers' demand of higher wages knowing that high inflation allows them to shift the burden of higher cost of wages to consumers in the form of higher prices (1 mark).

(e) The businessman has predicted that Malaysia will soon be the top Asian shopping destination for both Malaysian and foreign tourists within three years.

Up to 6 marks for explaining that the evidence supports and does not support the prediction

Up to 4 marks for explaining that the evidence supports the prediction

The evidence that supports his prediction is undervalued Malaysian currency, which makes shopping in and touring Malaysia cheaper as compared to other destinations. The decision of the Malaysian government to abolish tariffs and duties on goods with designer brand names will also make shopping cheaper and attractive in Malaysia. The excellent service in shops and availability of different shopping outlets is also likely to make Malaysia a top shopping destination. Lower interest rates reduce the cost of borrowing as well as the reward for savings, encouraging more consumption and injecting demand into the Malaysian economy. Increased public spending, through a multiplier effect, also raises incomes and purchasing power, and could help Malaysia become a top shopping destination.

Up to 4 marks for explaining that the evidence does not support the prediction

However, increased inflation rate may erode the real income and hamper the chances of Malaysia becoming a top shopping destination. It is also expected that there will be a slump in the US economy, which will reduce incomes of Americans and discourage them from visiting and shopping in Malaysia. Since the US is a huge customer of Malaysian goods, a slump in the US economy may have a huge effect on Malaysian exports. Decreased exports withdraw aggregate demand, and through a multiplier effect, may lower employment and incomes in Malaysia. This may also decrease the domestic demand of Malaysian goods.

1 mark for the conclusion

On the whole, it seems that the prediction of the businessman will turn out to be true, provided the Malaysian government takes actions to control inflation without hampering economic growth.

2. (J13/42/1)

1 Collusion: Exploitation or benefit?

In 2011, two soap and detergent fimr s, Unilever and Procter & Gamble, were fined a total of €315 m (US$ 220 m) for fixing the price of washing powder in eight European countries. Procter & Gamble is the world's largest consumer products company. The two firms had colluded over prices for more than three years. The collusion began when they agreed to implement an industry-wide programme to improve the environmental impact of their products. They agreed to reduce the amount of packaging they used but to keep the prices unchanged. Then, later, they collectively agreed to raise prices in Belgium, France, Germany, Greece, Italy, Portugal, Spain and the Netherlands. This collusion was against the European Union competition laws and was regarded as 'unfair competition'.

Some information from the 2010 Annual Report of Procter and Gamble (P&G) is shown in Table 1.

Table 1: Annual Report of Procter and Gamble

	2006	2007	2008	2009	2010
Total Revenue US$ million	64 416	72 441	79 257	76 694	78 938
Profits US$ million	8 684	10 340	12 075	13 436	12 736
Distributed Profit per Share US$ per share	1.1	1.28	1.45	1.64	1.80

The report states that 'No company in the world has invested more in market research than P&G. We conduct over 20 000 research studies every year. Over the past 15 years, P&G had 125 notab le innovations – more than our six largest competitors combined. P&G is the brand-building leader of our industry with 50 brands that are among some of the world's best-known household names – and which together make up 90% of P&G's sales and more than 90% of profits.

P&G is creating the advantage of large scale by integrating across our different businesses and markets, allocating resources more efficiently than any small business can do on its own.'

(Source: Adapted from P&G Annual Report 2010)

(a) Explain what is meant by collusion and when it is most likely to occur in an industry. [4]

Collusion is an agreement between firms to fix prices by restricting output. The member firms are assigned quotas proportionate to their current output level. These agreements are made to avoid price and/or promotion wars (up to 2 marks). It is most likely to occur when there are a small number of large sized firms, where it is easy to monitor and/or where products are similar. For such agreements to be possible and successful, entry of new firms should be difficult (up to 2 marks).

(b) Analyse, using Table 1, whether price fixing benefited Procter and Gamble. [4]

According to Table 1, the revenues, profits and distributed profit per share of Procter and Gamble (P&G) kept increasing throughout with the exception of 2010, where profits decreased, though revenues and distributed profit per share still increased (1 mark). The collusion allowed P&G to fix the price and earn high revenues and higher profits (1 mark). However, profits fell in 2010, which may be due to increase in cost, but information about that is not available in Table 1 (1 mark). Distributed earnings per share increased in 2010 even when profits fell (1 mark). That was probably because of generous dividend policy of P&G. Sales fluctuated but the overall trend was an increase in sales (1 mark).

(c) Suggest why creating the advantage of large scale by 'integrating across its different businesses' might benefit a firm. [6]

The integration across different businesses allows a firm to have a better control over its supply chain (1 mark). The firm can also achieve a variety of economies of scale, especially the

managerial, marketing, financial and risk bearing economies of scale (up to 3 marks). The profitability of the firm may increase, as the commission, which otherwise has to be paid to distributors and suppliers, can be saved (1 mark). Integration also allows firms to ensure improved quality and better customer care (1 mark).

(d) Is the evidence in the article sufficient to conclude that Procter and Gamble is working against the public interest? [6]

Analysis that the evidence provided is sufficient to conclude that P&G is working against the public interest (up to 4 marks)

The decision of P&G to enter into a collusive agreement allowed it to charge a higher price by restricting output (1 mark). The consumer surplus decreases, because of both higher prices and lower output, resulting in loss of public welfare (1 mark). The high / supernormal profits earned by P&G allowed it to spend more on advertisement, making it harder for existing firms and potential competitors to compete with P&G (1 mark). This enhances the market power of P&G, which is against public interest (1 mark). Supernormal profits may also make P&G complacent and reduce the pressure to be efficient, resulting in higher cost of production (1 mark).

Analysis that the evidence provided is not sufficient to conclude that P&G is working against the public interest (up to 4 marks)

The article has not provided information about the prices charged by other firms and the profits made by them (1 mark), so it is difficult to conclude that P&G is working against public interest. The fact that P&G is spending highest amount of budget on R&D goes to show that P&G is working in public interest (1 mark). The article also shows that over the past 15 years, P&G had 125 notable innovations, making it a big contributor to public welfare (1 mark). The collusion agreement to implement an industry wide program to improve the environmental impacts of their products by reducing the amount of packaging shows that the collusion was not necessarily against public interest (1 mark). P&G is the brand building leader of the industry dealing in the world's best known household names contributing to improved living standards and public interest (1 mark).

3. (MJ15/43/1)

1 Consumer exploitation?

Economists often speak of price discrimination. Some would argue that price discrimination exploits consumers. Others say that it is related to demand and supply and is acceptable in a market economy.

When you buy a rail ticket the price you are asked to pay may well depend on the departure time, the route, the rail operator, whether you have a discount railcard, whether you buy an economy ticket or a first-class ticket and whether you buy the ticket on the Internet or at a ticket office.

Similar price variations occur when booking hotel rooms and when buying theatre tickets. In hotels, the same room is cheaper on some days of the week or at certain times of the year than others. In theatres, it is cheaper to buy a ticket for an afternoon performance than a ticket for a Saturday evening. It is also cheaper to sit in the seats further from the stage than in those seats nearer the stage.

Some football clubs also adopt a similar approach with what they call 'price-categorisation'. There are three categories of price depending upon whether the football team is playing another team with well-known players which is near the top of the league or whether the team is in the middle or near the bottom of the league. To charge more for a game against a top team is asking the buyer to believe that the game will be better than a game against a lower-placed team. However, excitement and entertainment are sometimes just as great with the lower-placed team. Football clubs also often charge lower ticket prices to children attending football matches with an adult.

The rail operator and the football club justify the charges by saying that they require the extra revenue in order to improve the facilities and infrastructure and cover increased costs. The railway track needs replacing; the football stadium needs continual maintenance. Some would argue, however, that it is simply an attempt to maximise profit. Interestingly, not all the more expensive tickets are sold as people do not buy them.

Source: Adapted from Telegraph Sport, January 2013

(a) What is meant by 'price discrimination'? [2]

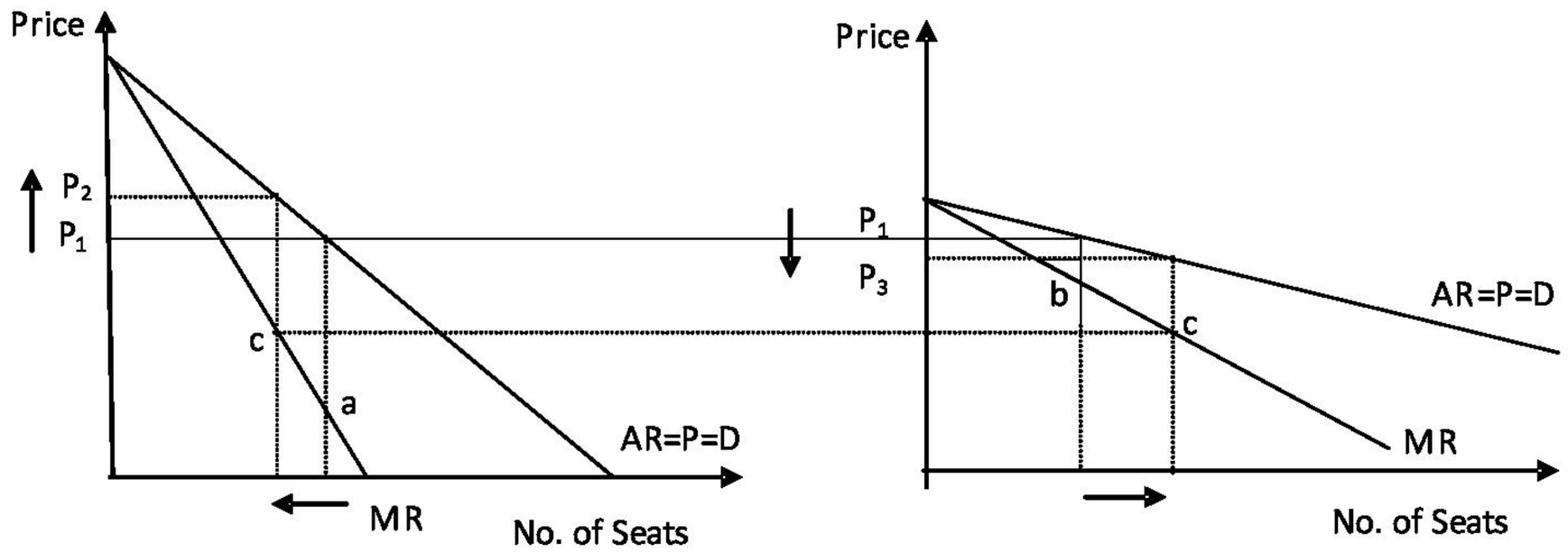
Price discrimination is the process of charging different prices from different customers and/or for different units sold for reasons unrelated to cost. For a successful and profitable price discrimination, the firm must have some monopoly power and should be able to identify and separate different market segments with different elasticities of demand.

(b) Identify one example of price discrimination and one example of non-price discrimination in the article. Explain the reason for each of your choices. [4]

One of the examples of price discrimination is different prices of the same hotel room on different days of the month. Though the rooms cost the same to the hotel owner on different days, a higher price is charged on days when hotel rooms are in greater demand, for example, during the first few days of the month, when people have more money available for spending. The same hotel rooms could be sold at lower prices on days when demand is low, for example, during off peak season.

(c) Draw and explain a diagram for price discrimination. [4]

The following example provides a graphical representation of successful price discrimination by an airline operator.



The panel on the left shows a price inelastic demand curve for business travelers, compared to a flatter demand curve for tourists, shown in the figure on the right. Initially, the price charged in both the segments is the same, P_1. At this price, revenue generated from selling an extra seat to a business traveler, 'a' is smaller than that generated by offering the same seat to a tourist, 'b'. A profit maximizing monopolist may therefore decide to reduce the number of seats for business travellers and offer the same to tourists. The revenue gained by selling one extra seat to a tourist exceeds the revenues lost by selling one less seat to a business traveler, resulting in increased Total Revenues and greater profits for the monopolist as the Total Costs remain unchanged. The monopolist continues to sell more seats to tourists till the revenue generated from the sale of an extra seat becomes equal in both segments. This happens at point "c" in the given figure. Eventually, the airline operator charges a higher price, P_2 in the segment where demand in price inelastic and a lower price, P_3 from tourists, whose demand is price elastic. Once MR is equated in all market segments, there is no further possibility of increasing total revenues and profits by selling more or less in a certain segment.

(d) The article says that price discrimination 'is related to demand and supply and is acceptable in a market economy'. Is there any relationship between price discrimination and demand and supply? [4]

The process of charging different prices from different customers requires an understanding of demand and supply forces. The firm can exercise price discrimination successfully only if it is aware of different elasticities of demand of difference customers. A high price from customers with low price elasticity of demand and a low price from customers who are more sensitive and responsive to price changes helps firms maximize revenues and profits.

The firm should also be able to restrict supply to charge a high price in the market segments where price elasticity of demand is low and should be able to sell more in segments with high price elasticity of demand.

(e) The article says that 'price discrimination exploits consumers'. The implication is that it should not be allowed. Do you agree with this assertion? [6]

It may appear that price discrimination is completely intolerable as it increases the profits of monopolists at the expense of the surplus enjoyed by consumers. Firms charge high prices from customers who are willing to pay high prices and lower prices from those who are willing to pay low prices. This allows firms to maximize revenues by depriving consumers of consumer surplus, as the price charged by firms comes closer to the price consumers are willing to pay. Another distributive effect of price discrimination is that consumers with price elastic demand gain at the expense of those with price inelastic demand. Consumers getting the product at low prices may not necessarily be poor, and the firms may have to incur a higher administration cost on segregating the market in different segments.

However, price discrimination enables the seller to offer products at lower prices in segments which may remain unserved otherwise (because of high prices), resulting in higher quantity traded. It allows businesses to use production capacities in a better way, as, instead of completely closing the service, they may offer their product at a low price during periods of low demand. For example, a theatre operator may choose to play a show on a weekday afternoon at discounted prices. This will not only raise revenues and profits of the theatre operator, and provide employment to the workers, but will also provide entertainment to consumers who cannot afford paying the full price for a weekend show. These extra profits could be used by the firm to improve

the overall quality of the product. Price discrimination is also desirable and beneficial, as highlighted by the following examples:

- Intelligent students getting scholarships
- The poor and less privileged getting food stamps and other essentials at subsidized rates
- Organizations giving discounts to their employees on buying goods produced by them, for instance

an airline offering discounted prices for air tickets to its employees (however, misuse of subsidies and discounts should not be overlooked)

4. J16/43/1

1 Airport Expansion

In 2014, a proposal by Heathrow Airport Authority (HAA) in London recommended building an extra runway at Heathrow, one of the world's busiest airports. HAA acknowledged that it was an initial proposal that needed more detailed work.

They claimed that, if built, the runway would deliver greater economic benefits and be a better option for economic growth for the UK than any other proposal for new airport capacity. HAA was not able to quantify the benefits with any precision but said they would range from £50 billion to £156 billion (US$84 billion to US$262 billion) with a 'central estimate' of over £100 billion (US$168 billion). The majority would benefit the wider economy by creating jobs, encouraging trade, boosting spending and improving public finances. The proposal would allow the airport to be connected to more emerging markets and enable 40 new destinations to be served directly, including some in India and China. Cargo volumes would double and UK competitiveness would increase.

HAA added that more efficient vehicles, an increased proportion of passengers travelling by public transport and new aircraft technology would mean that the extra flights would not exceed the European Union pollution limits.

In order to build the new runway, major motorways would need to be altered. Many homes would have to be demolished but the airport said they would pay the owners 25% above the property's market value. When it was built, car drivers wishing to take passengers to the airport would have to pay a congestion charge.

Those opposing the new runway said that thousands of people would be forced out of their homes and communities would be destroyed and, while waiting for a decision to be made, they would be unable to sell their homes. 240 000 people would suffer from airport noise.

HAA said the runway would cost £15.6 billion (US$26.2 billion) to build, with the government paying £1.2 billion (US$2.1 billion) towards the motorway alterations.

There were alternative proposals. The first was to build a completely new airport to the east of Heathrow. The second was to add another runway to an existing airport, Gatwick, to the south of Heathrow.

HAA argued that a completely new airport would take much longer to build and be more expensive than an extra runway and would mean higher fares for passengers.

The owners of Gatwick Airport insisted that the new runway at Heathrow was not in the best interest of passengers and that Gatwick would be better able to offer lower fares and connect to emerging markets with longer-range aircraft. They said that their plans were cheaper – £7.8 billion (US$13.1 billion) – and could be built quicker than the Heathrow option, with less disruption to motorways. Noise from another runway at Gatwick would also affect fewer people – 14 000, not 240 000.

Sources: Heathrow Airport website, accessed 24 May 2014, and *Evening Standard*, 13 May 2014

(a) HAA said 'the new runway would benefit the wider economy'. Explain why its claim might be justified. [4]

The new runway will provide convenient travelling opportunities to passengers as well as more business opportunities for airline operators and businesses providing travel related services (1 mark). However, the benefits of the new runway will also be extended to those who may not be directly involved in its use (1 mark). It will create more opportunities for investments as the factors of production will become more mobile (1 mark). The international trade will also increase, creating greater opportunities for specialization and variety of goods for consumers (1 mark). The social benefits (private benefits + external benefits) thus exceed private benefits (1 mark).

(b) Explain why dropping off passengers could be classified as an externality and suggest one method of addressing this externality. [4]

An externality is a cost borne or benefit enjoyed by people who are not directly involved in the consumption or production of a product (1 mark). People travelling to the airport to drop off passengers results in road congestion (1 mark), which increases the travelling time and fuel cost for commuters travelling for other purposes (1 mark). This is an example of negative externality, where the cost of consuming a product is extended to an outsider / third party (1 mark).

(c) Airport infrastructure is privately owned and makes money for its owners. Consider why in this case the government would pay £1.2 billion towards the cost of motorway alterations. [5]

The government investment / contribution towards the cost of motorway alterations is a part of a government's job to improve the infrastructure of the economy (1 mark). The improved infrastructure reduces the travelling time and cost of businesses, and creates more investment and employment opportunities (1 mark). The government spending on infrastructure also injects demand into the economy and through a multiplier process, results in a much larger increase in national output (1 mark). Motorways are not only used by those who use airports (1 mark), so the benefits of government spending on motorways are extended to the wider economy (1 mark), justifying this expense.

(d) Consider whether the information in the proposal by the HAA was mainly factual evidence or opinion and comment on whether you would support the proposal. [7]

Analysis that the information in the proposal was factual (up to 4 marks)

HAA provided the evidence by suggesting that many homes would have to be demolished and the owners would be paid 25% above the market value of the properties. HAA also acknowledged that the new runway would allow greater connectivity and more destinations would be served and that the cost of building the new runway would be less than the cost of building a new airport. Another estimate was given by HAA that 240,000 people would suffer from airport noise and the runway would cost £15.6 billion to build.

Analysis that the information in the proposal was not factual (up to 4 marks)

However, most of the evidence and information provided by HAA is uncertain, and therefore, an opinion of the authority. For example, HAA was not able to quantify the benefits with any precision but said they would range from £50 billion to £156 billion. The presumption that many airport users would travel by public transport was also not substantiated with any evidence and no estimate of such users was provided. There is a statement by HAA about the extent of wider benefits, but it is also not supported by any facts or figures. The statement of HAA that the benefits from airport expansion would be more than the benefits from other options is vague and superficial.

Maximum 6 marks for the analysis

1 mark for the conclusion

A complete cost-benefit analysis should be carried out for both options of building a new runway at Heathrow and expanding Gatwick Airport before the decision. The proposal of building a new runway needs more research.

5. (J17/41/1)

1 Changes in the world oil market and their effects

Founded in 1960, the Organisation of Petroleum Exporting Countries (OPEC), consisted of five countries all of whom produced oil. OPEC's success, with Saudi Arabia as its market leader, encouraged other oil exporting countries to join. There are now 12 OPEC member countries, including Iran, Nigeria and Venezuela. OPEC is responsible for over 35% of world oil production, working together to fix prices and control output.

OPEC has faced various external shocks. In recent years, the financial crisis 2008–2011 reduced global demand for oil. Also, since 2012, non-OPEC oil supplies have increased, as shown in Fig. 1, mainly due to the use of fracking – a process of extracting oil from rock using very expensive drilling equipment. This has happened in spite of opposition to fracking by environmentalists who accuse the fracking companies of causing minor earthquakes and polluting underground water sources.

The main oil producer using fracking is the United States (US) which has become almost self-sufficient in oil and consequently does not need to rely on OPEC. In 2014, the US even began to export its oil, especially to Europe as a rival to OPEC and Russia. This had an effect on the price of oil as shown on the chart in Fig. 2.

There have been both winners and losers from this change in production of oil. While all oil importing countries have become winners as the price of oil declines, undoubtedly the US has

strengthened its economy the most. The fracking boom has increased consumer spending in the US, which has been a key element in the recovery of the US economy from the financial crisis.

The losers are OPEC's members that are dependent on oil as the main source of revenue. Nigeria greatly overestimated the price of oil and, as a result, it had to devalue its currency in November 2014, raise taxes on luxury items and cut government spending by 6%.

Fig. 1 Supply of oil 2012–2015

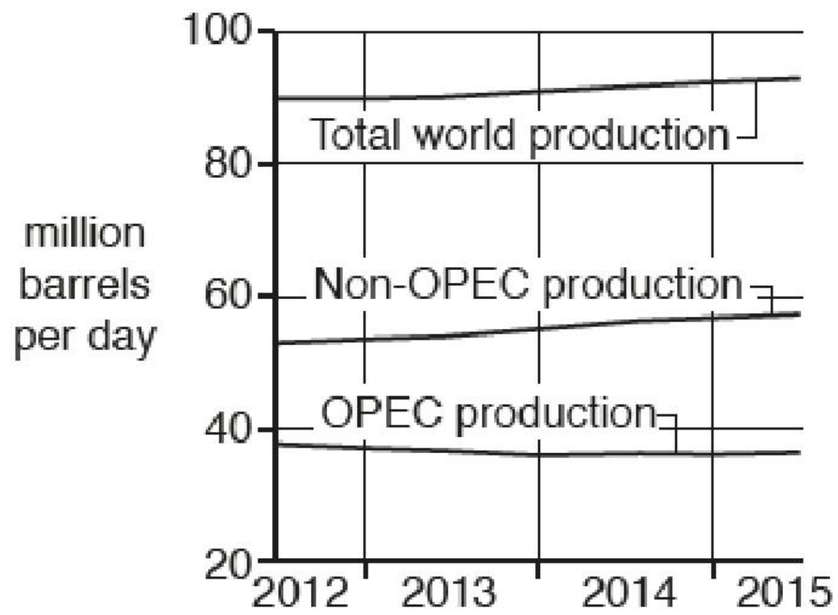
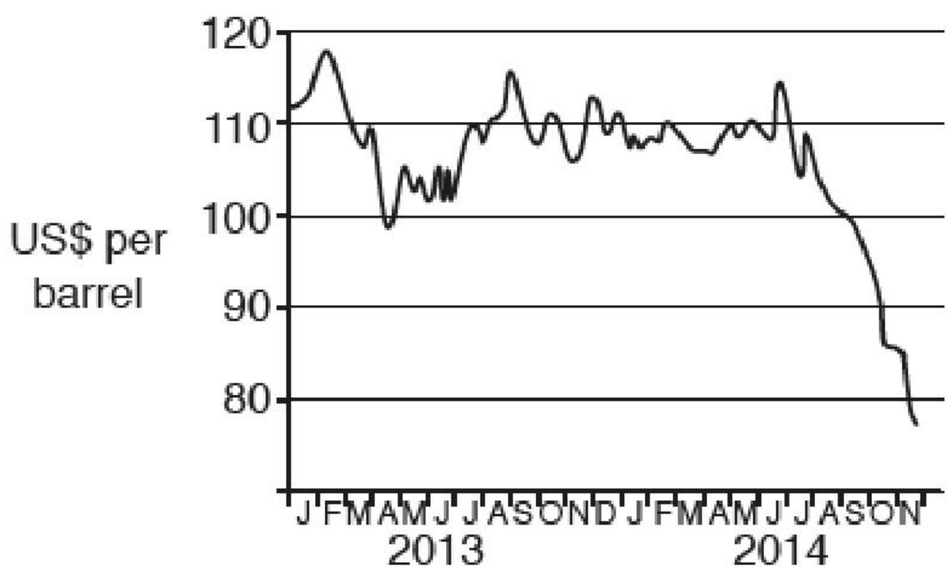


Fig. 2 World price of oil 2013–2014



Despite the fall in oil prices, in January 2015 Saudi Arabia refused to agree to demands from other OPEC members to cut oil supplies in order to keep prices high. Saudi Arabia was happy to allow oil prices to fall further in order to put US fracking companies out of business.

Source: The Times, 5 December 2014 and 7 January 2015

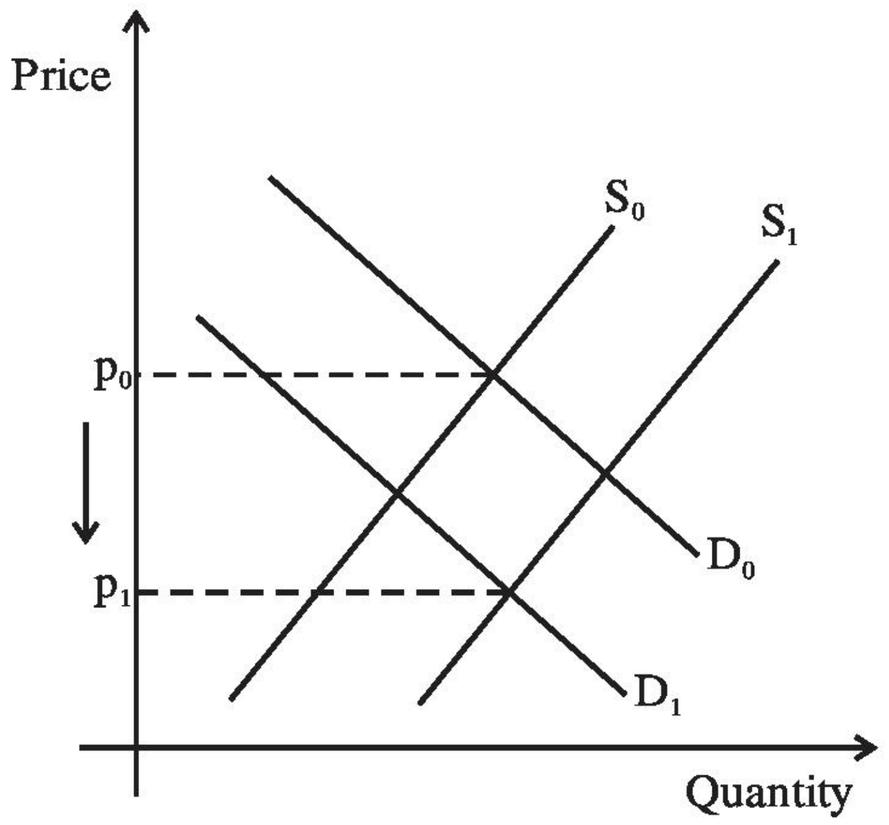
(a) Define what is meant by a cartel and explain why a cartel might be formed. [3]

A cartel refers to a group of firms that work together to protect their interests. They are formed when a few large producers decide to cooperate with respect to aspects of the prices they charge and the output they produce. Once formed, cartels increase the prices of goods and services and fix the prices for all members, so that competition on price is avoided. They also restrict output sold in the market in order to increase profits. Cartels are normally formed in oligopolistic markets.

(b) What evidence is there in the information that OPEC is a cartel? [4]

The member countries of OPEC work together to fix the price and control of the output of oil. This is an important feature of cartel. According to Fig.1 OPEC'S output remained constant throughout 2012-2015, showing that the output was fixed. Saudi Arabia referred to agree to demands of other OPEC members to restrict supplies in order to keep prices high. This indicates that OPEC is a cartel as all countries are dependent on each other and even if one firm refuses to cooperate, price fixing agreements will not be successful. However, OPEC, with a market share of 35%, cannot have absolute control over the price and output, as majority of the oil is produced by non-members. OPEC is thus more like a market leader than a cartel.

(c) Given the information above, analyse with the help of an appropriate diagram whether the overall price change shown in Fig. 2 is consistent with what would be expected in the market for oil. [5]



The output has increased during the period 2012-2015 because of the use of fracking by the US. This resulted in a rightward shift in the supply curve from S_0 to S_1, as shown in the diagram. Additionally, due to the financial crisis of 2005, demand for oil reduced during the same period. This would cause the demand curve to shift leftward. The combined effect of a rightward shift in the supply curve and leftward shift in the demand curve results in a fall in the price from P_0 to P_1 indicating that the price change shown in Fig.2 is consistent with what was expected in the market for oil.

(d) Is there any evidence in the information that might lead to the conclusion that the US economy is a winner in the short run but could become a loser in the long run? [8]

The US economy is a winner in the short run as it no longer relies on OPEC for oil. It is self-sufficient in the production of oil, which has reduced the need for imports and has increased the oil exports of the US. This may improve the trade position of the US. Increased export earnings would lead to greater AD, leading to economic growth and may even aid the US to come out of the financial crisis.

However, in the long run, the price of oil is expected to fall further due to Saudi Arabia's refusal to cooperate with other OPEC members. The low price of oil may not be enough to cover the cost of fracking, forcing the US to shift back to imports. Secondly, environmentalists in the US are opposing fracking as they believe it creates negative externalities e.g. minor earthquakes and polluted underground water sources. Lastly, due to an increase in expert revenues of the US, the US dollar may appreciate, making other US exports expensive and less price competitive. This may result in a decrease in export revenues and structural unemployment in the US.

6. (N13/41/1)

1 Banks, supermarkets and oligopoly market power

Some banks have been accused of having a control over the market that enabled them to get away with poor service, confusing products and dishonest claims about free banking. However, the banks maintained that their size created economies of scale, the benefits of which were passed on to consumers in the form of lower prices. A report stated that the banks' claim was not correct. Any benefits went mainly to shareholders and not to consumers. The banking industry, it said, had many of the characteristics of an oligopolistic market. The report said that charges for services were often difficult to determine and that obstacles which prevented customers switching accounts to rival banks meant that the banking industry was not competitive. *(Source: The Independent)*

Another industry dominated by a few large firms is food retailing. Morrisons is such a firm with 420 stores. It is the fourth biggest supermarket in the UK with a 12.3% market share in 2011 (its three main rivals had market shares of 30.3%, 16.9% and 16.5% based on the value of total sales). Unlike its bigger competitors, Morrisons owns many of the factories from which it gets its food. This vertical integration gives it an advantage over rivals. In addition, some of the products it sells are made in its supermarkets. It started to produce its own products in order to save costs. The stores have, for example, their own bakeries and butchers. The supermarket has plans to introduce home deliveries, on-line ordering and take-away meals. Its aim is to grow further. It recognizes that it would take years to match the market share of its bigger rivals but it wants to be a 'more dangerous' competitor. *(Source: The Sunday Telegraph)*

Table 1: Sales and Market share of UK supermarkets and smaller shops

Supermarket and shops	Value of Sales December 2009 to February 2010 £m	Market Share % of total Sales 2010	Value of Sales December 2010 to February 2011 £m	Market Share % of total Sales 2011	% Sales change Dec. 2009–Feb. 2010 compared to Dec. 2010–Feb. 2011
Tesco	7102	30.4	7352	30.3	3.5
Asda	3973	17.0	4095	16.9	3.1
Sainsbury's	3799	16.3	3998	16.5	5.2
Morrisons	2865	12.3	2992	12.3	4.4
All other food shops	5630	24.0	5851	24.0	3.9
Total	23369	100.0	24288	100.0	3.9

(Source: http://www.kamcity.com)

(a) The supermarket claims that it benefits from integration. The banks maintain they have economies of scale. Distinguish between integration and economies of scale. [4]

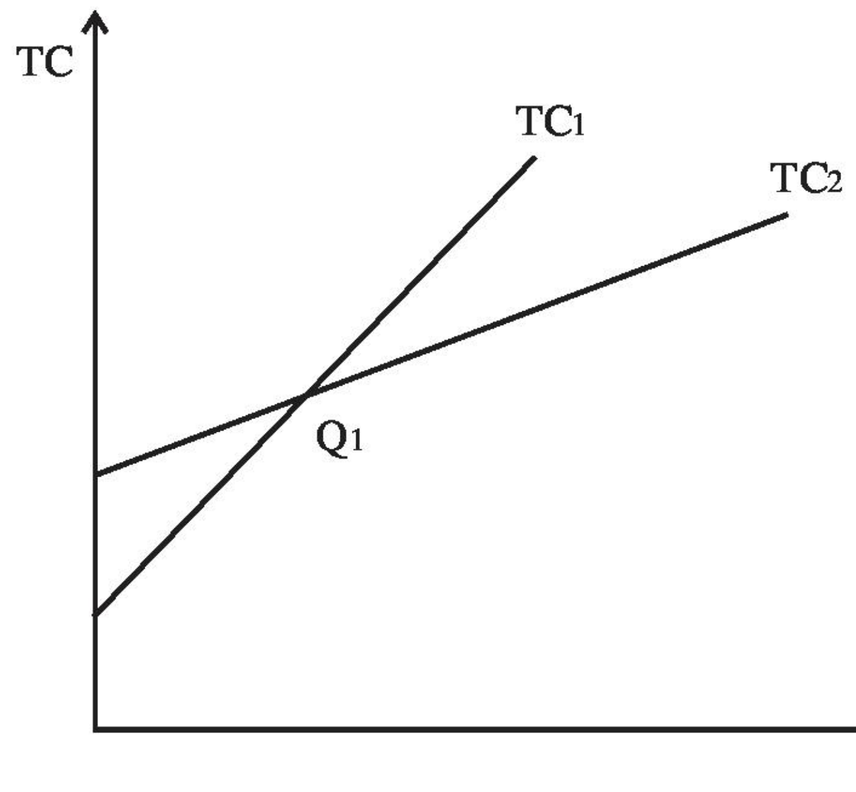
Integration is a process of increasing the size of a firm either by a merger, takeover and acquisition of another firm (1 mark). The integration could be horizontal, where a firm expands while staying at its **existing** stage of production for e.g., a supermarket taking over another supermarket. The vertical integration, on the other hand, is expansion of a firm either by moving closer to its source of supply (backward vertical integration) or moving towards its market/customers (forward vertical integration). (Up to 2 marks)

A larger business may succeed in decreasing long run average cost which is economies of scale (1 mark). A business may achieve economies of scale either through integration or by growing internally / organic growth (1 mark).

(b) Analyse how any increased integration might affect the costs of a supermarket. [4]

The integration increases firms' capacity to produce, resulting in higher fixed cost and total cost (1 mark). However, in the long run, the firm will be able to achieve economies of scale and save money in terms of commissions which will otherwise have to be paid to the suppliers/distributors (1 mark). The total cost will rise slowly as the production of additional units will cost less after the integration (1 mark). However, total cost would be lower only for a firm which succeeds in producing a greater output, neutralizing the effect of higher fixed cost (1 mark).

Optional Material:



In the diagram above, TC_1 is the total cost curve before integration and TC_2 is the total cost curve after integration. The vertical intercept of TC_2 is higher, showing higher fixed cost, but its slope i.e. MC is lesser, so it is cheaper for the firm to produce additional units after integration. The total cost would be lesser for such a firm only if it produces a large quantity i.e. a quantity in excess of Q_1.

(c) Comment on the performance of Morrisons between 2009–2011 compared with its larger competitors. [4]

In comparison with the two major competitors, TESCO and ASDA, the performance of Morrisons relatively improved (1 mark) as it succeeded in maintaining its market share whereas the market share of the other two fell (1 mark). However, Sainsbury's was the biggest gainer as its market share increased during the same period (1 mark).

Morrisons experienced a sales increase of 4.4% which was higher than that of TESCO and ASDA (1 mark), however, Sainsbury's experienced the fastest growth in sales of 5.2%. Compared to ASDA and TESCO, Morrisons performed better, but in comparison with Sainsbury's, it did not (1 mark).

(d) Is there enough evidence in the information to conclude that banking and food retailing are oligopolistic markets? [4]

The banking industry seems to be less competitive and consists of large size banks which can exploit economies of scale (1 mark). The banks are not transferring the benefit of economies of scale to the customers which indicates less competition (1 mark). There are restrictions preventing customers from switching accounts to rival banks which also indicates that customers have fewer options (1 mark). However, the article is silent about the entry barriers (1 mark) and does not give any evidence that banks are colluding and/or fixing prices (1 mark).

Food retailing industry is dominated by a few large firms making it look like an oligopoly (1 mark), there is a high concentration ratio and 4 large supermarkets have a combined market share of 76% (1 mark). However, many small firms also exist (1 mark) and there is no evidence of entry barriers. Similarly, there is no evidence of collusion and/or price fixing agreements (1 mark).

7. (N13/42/1)

1 The objectives of firms

Unilever, a multinational global food manufacturer, with many branded products, has announced a partnership with Oxfam, the international relief agency, to help farmers in developing countries. Unilever welcomed the partnership and said that their objective was 'to double the size of our business while halving our environmental impact. We want to do this by maximising the positive social impact of our business. A major element of this is to promote better livelihoods by incorporating 500 000 small farms in developing countries and small-scale distributors into our supply chain. This way we hope to have a positive impact on the lives of people living in poverty.'

Historically, companies in the food and drink industry have tried to improve efficiency and minimize costs by reducing the number of international suppliers they use. However, Oxfam said that firms are now starting to consider new ethical business models about how they source their produce. There is a need to move away from a short-term focus on profit margins and consider long-term objectives.

In 2011 a drugs company, GlaxoSmithKline, (GSK), manufactured a new medicine which had a higher market price than a rival medicine from another company. The medicine was expensive to research and produce. The expected annual revenue for the company from the sale of the medicine was estimated to be around US$314m; the annual cost of hospital treatment with the medicine for just one patient was around US$23 000. A government negotiated a new type of

deal with GSK. The company agreed that it would supply public sector hospitals with the medicine at the same price as its rival's product. It would also return some of the revenue it received from the hospitals if its product proved to be less successful than the rival product. The government said it was introducing a 'value-based pricing model'. A spokesperson for GSK said 'we are moving in the direction where price is determined by value and value is determined by evidence'.

(Source: The Sunday Telegraph)

(a) In what type of market structure is Unilever likely to be operating? Explain your answer. [3]

Unilever seems to be operating in an imperfect market. It is a large sized firm which seems to have influence over pricing and output decisions. It has differentiated products in the form of many branded products requiring it to spend on advertisement.

(b) Why might it be thought that there could be a conflict between Unilever's stated objective and its policy concerning its suppliers? [5]

One of the aims of Unilever is to double the size of its operations, but by reducing the number of suppliers and shifting to small farmers, the per unit cost will rise due to the lack of economies of scale, making the idea of expansion less feasible. It also aims to improve efficiency by reducing international suppliers. However, by moving to local and a high number of small sized farmers, the objective of reduced environment impact may not be fulfilled as there will be increased pressure on resources and greater transport requirements.

(c) GSK's new drug was expensive to research and develop. Why might a company conduct research and development (R&D) if it is so expensive? [4]

Firms spend money on Research & Development (R&D) to innovate and come up with new products, which not only help them replace old/outdated products, but give them a competitive edge over their rivals. The position of market leader enables them to charge high prices and earn more revenues and profits in the long run. The cost of research will be offset if there exists a strong demand for the newly developed products. Governments often encourage R&D by giving patents, which are the exclusive rights of production of a new product for a certain duration of time. This encourages firms to come up with new and better ideas as the rights of exclusive production enables them to charge high prices and make profits.

(d) Discuss whether there is enough evidence in the information to conclude that the objective of Unilever and GSK is not that of profit maximisation. [8]

Up to 4 for each company but reserve 1 for a stated conclusion to the question.

Unilever seems to be pursuing the objective of profit maximization as it has a plan of doubling its production capacity. However, it is also trying to reduce the environmental effects of its activities, which may raise its costs and reduce profits. Oxfam also acknowledges that firms like Unilever are now starting to consider new business ethical models that will shift the focus from the short term objective of profit maximization to the more long term objective of being a more socially responsible corporation i.e. CSR (Corporate Social Responsibility).

GSK has set a higher price for its new medicine than that of its competitors, indicating its objective to make high profits. However, its decision to reduce price for public sector hospitals and its refund policy may decrease profits. One may, however, argue that by agreeing to a lower price for public sector hospitals, GSK is not giving up profit maximization, but only shifting from short term profits to more sustained long term profits.

The article does not provide information about the pricing and profits of other firms and also about the trends of profits of Unilever and GSK. Without this information, it is difficult to conclude that the objective of these firms is not maximization of profits.

8. (ON14/41/1)

1 Employment in India

It is well known that many foreign countries have opened offices in India to take advantage of its low-cost labour force. Less well known is the extent to which Indian firms employ other firms within India to do their work. Compared with other economies most manufacturing firms in India are small when measured by the number of permanent workers. However, they increase their labour force by employing temporary workers from private employment agencies whenever they are needed.

Walk into any of India's new shopping malls and many of the shop workers, caretakers and security staff will be employed by companies other than those of the owners of the mall or the shops within it. These workers are paid as little as half what the permanent workers earn and normally receive few extra benefits, such as paid holidays. Although each state in India has its minimum wage, it applies only to the permanent workers, not to temporary workers.

Fig. 1:
Temporary workers as a percentage of all workers in India

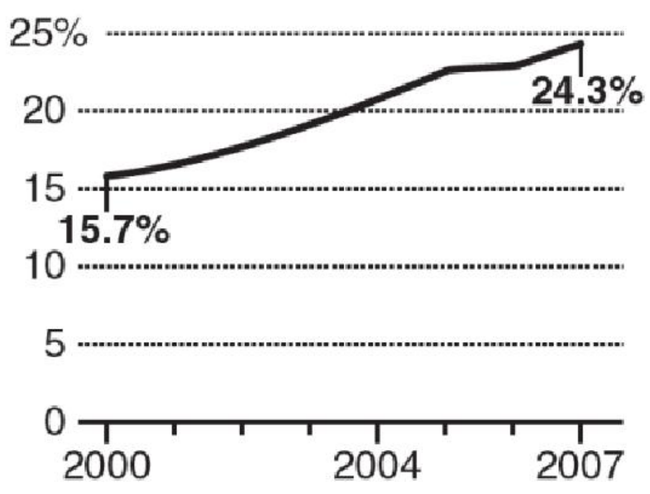


Table 1:
Percentage of all firms with fewer than ten permanent workers, in 2007

China	4%
U.S.	11%
South Korea	13%
Poland	18%
Italy	26%
India	**89%**

Source: Indian Labour Bureau; OECD

This employment model is also described as unsatisfactory by managers. They say that they have to hire and train temporary workers who have no loyalty to the firm and that finding skilled temporary workers is difficult. They say it restricts the growth of the firm and does not create enough new jobs for the 12 million who enter the labour force each year.

Many economists assert that India's labour laws will continue to restrict growth in the number of jobs. This is not good for India's economy overall, although it does allow private employment agencies to profit from the supply of temporary workers.

Source: extract from New York Times, 2011

(a) Identify three reasons why temporary workers in India are disadvantaged compared with permanent workers. [3]

- They are being paid lower salaries than the permanent employees.
- Temporary workers are given low benefits such as paid holidays.
- The jobs of temporary workers are not secure as they are usually not offered permanent contracts.

(b) Is the evidence given sufficient to support the statement that 'most manufacturing firms in India are small'? [4]

The evidence given is not enough, as table 1 has information about "all" the firms, making it difficult to comment on the size of only the manufacturing firms. It also gives information about number of permanent employees, but not the total number of employees, which could have been a better indicator of the size of a firm. The number of employees is one of the indicators of the size of the firms, however, the information about other indicators, such as sales turnover and output produced is not given.

(c) Distinguish between fixed cost and variable cost and consider how temporary workers and managers would be classified. [3]

Fixed cost is the component of total cost which does not change with output produced, for example, the rent of the building. Variable cost varies directly with the output produced, for example, the cost of raw materials. Salaries of managers are more likely to be fixed cost, as their jobs are permanent and the decision of the firm to change output has no impact on their salaries. However, the salaries of temporary workers are more likely to be variable as these workers are hired only when they are needed, that is when demand increases and output has to be raised.

(d) Discuss whether the payment of low wages could be good for India's economy. [10]

Low wages reduce the purchasing power of workers, forcing them to reduce spending and may help control demand pull inflation. Assuming unchanged labour productivity, lower wages help reduce unit labour cost and also help control cost push inflation. Thus, payment of low wages helps control inflationary trends in India and makes Indian products more price competitive both at home and abroad. Price competitive Indian products help generate greater export revenues and improve the trade balance. Lower wages and lower cost of production raise the chances of profits and attract more investments from foreign as well as local firms and encourage them to hire more workers, helping reduce unemployment.

However, lower wages raise income inequalities as rich owners of firms gain at the expense of poorly paid workers. It reduces the living standards of workers and may result in lower morale, reduced productivity and higher cost of production. Lower spending and lower aggregate demand as a result of lower wages may trigger recessionary trends.

For an emerging economy, such as India, with a huge population, lower wages could be a blessing, as they will attract more investments and create employment opportunities.

9. (N14/42/1)

1 Integration and market supply

Article 1. Cisco is a telecommunications company that profited from the rapid growth of the Internet in the 1990s by producing a wide range of equipment that became vital for companies providing internet services. It is now a world leader in this area.

In 2012 Cisco announced its intention to acquire Lightwire Inc. another telecommunications company. Cisco said that the acquisition would result in the integration of two comparable businesses. It would allow it to meet customers' demands for smaller and more powerful equipment and at the same time customers' capital and operating costs could be reduced. Cisco said Lightwire's employees would become Cisco employees.

Source: http://newsroom.cisco.com

Article 2. In Australia two big supermarket chains control up to 80% of grocery sales. They wish to increase the percentage of products carrying their own supermarket label (own-brand) from the current 20% of stock to over 40%. Analysts say this aim implies that supermarkets will engage in integration by taking over their suppliers and they are concerned about the effect on the 225 000 workers who manufacture alternative brands. They are also concerned about the effects it will have on consumers, competition and on Australia's capabilities as a food exporting nation.

Many manufacturers rely on the two dominant supermarkets as a means of getting their products to consumers. The supermarkets have adopted an aggressive attitude towards the manufacturers, for example, by forcing them to accept lower profits for their products. It is argued that stronger supervision by Australia's Competition and Consumer Commission is required to monitor the supermarkets to ensure fairness and prevent a misuse of market power.

Some manufacturers, as well as making their own products, also supply the supermarket with its ownbrand products which are usually cheaper for the consumer. This provides both volume and certainty of sales for the manufacturer in the short run. However, it means that the manufacturer is effectively competing with itself, risking its long-term competitiveness and cutting its own long-term profit margins. This is because the supermarkets are less likely to stock the manufacturers' brands once their ownbrand is established.

Analysts draw attention to the possible serious results of this for research and innovation. With reduced long-term profitability, Australian manufacturers would not invest in research. Without innovation the food processing sector will decline and also without such a sector Australia's food exports will fall. Australia's long-term food security will be weakened as it becomes more dependent on food imports.

Source: http://www.theage.com.au

(a) Distinguish between the type of integration likely to occur in Australian supermarkets and the integration intended by Cisco. [3]

Australian supermarkets have decided to produce their "own brand" products, which is an example of backward vertical integration. By deciding to produce products themselves, the supermarkets are taking control over their supplies i.e. a stage of production that was performed prior to their existing activity of retailing goods.

Cisco has decided to take over Lightwire, another telecommunications business operation, at the same stage of production. This is an example of horizontal integration.

(b) What is likely to happen to employment if both examples of integration occur? [3]

Cisco claims that workers of both Cisco and Lightwire will become employees of Cisco, so there seems no immediate threat to employment opportunities. However, in the long run, the management of Cisco, in order to rationalize costs, may lay off a few workers to avoid duplication of roles, leading to reduced employment.

The decision of supermarkets to produce more of their "own brand" products will increase jobs in factories and production places producing "own brand" products, but will decease employment opportunities for manufacturers who produce other brands/products, as the sales for these goods will fall. The net effect on employment will be uncertain.

(c) The article concludes that Australia's long-term food security will be weakened. Analyse why this conclusion is made and discuss whether you support it. [4]

Food production requires land and water, and as both these resources are becoming more and more scarce, the role of Research & Development (R&D) is vital to find more efficient food production techniques, which use less water and less land. Reduced profits are likely to reduce the ability of manufacturers to invest in R&D, and in future, it may be difficult for these firms to produce food in the right quantity and at affordable prices, putting food security at risk. However, governments often subsidize R&D for food production, and lack of profits may not be a significant concern.

(d) Does the evidence in the article suggest that integration is beneficial? [10]

Cisco is likely to gain, as, after taking over Lightwire, it will have one less competitor, giving Cisco greater control over the market. It will also be able to exploit economies of scale by producing in bigger quantities and rationalize costs by avoiding duplication of activities. The increased profitability will enable Cisco to allocate more resources to R&D, allowing it to bring more innovative products in the market.

The consumers may also benefit in the form of lower prices, if Cisco transfers the benefit of lower per unit cost to the consumers. They may, however, lose in the long run, as the decision of supermarkets to rely more on their own brands will reduce the chances of smaller manufacturers becoming independent businesses and providing greater variety and choices to the consumers.

Some of the workers may also lose jobs, as Cisco may choose to cut down costs in the long run and lay off workers performing duplicate roles.

The decision of Australian supermarkets to produce more "own brand" products may benefit manufacturers as they will not only get steady demand from large supermarkets but will also be able to save their marketing costs. However, manufacturers will not be able to develop other brands, making them too dependent on supermarkets. It will be easier for the supermarkets to replace their suppliers, putting long term profitability and survival of manufacturers in doubt.

Stronger supervision by regulatory authorities such as Australia's Competition and Consumer Commission is required to monitor the markets and mergers to ensure fairness and prevent a misuse of market power. In such a case, the integration is more likely to be beneficial.

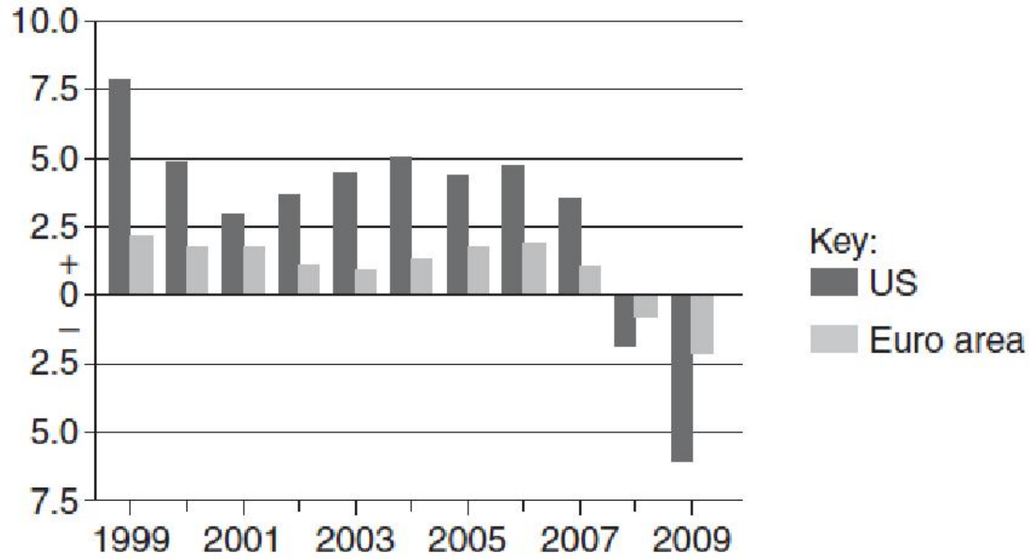
10. (N11/41/01)

1 Unemployment and Spending

In 2009 a recession occurred in America and Europe where unemployment rose. As well as seeing their incomes fall as employers cut wages and jobs, households also saw the value of their homes and savings shrink dramatically. This led to a swift reaction from consumers who reduced spending and increased savings, and planned to live within their income.

The change in consumer spending habits, as shown in Fig. 1, in both America and the European countries in the Euro area, caught retailers and manufacturers by surprise. In response companies tried to increase revenues by using advertising and sales promotions, often without success.

Fig. 1: Annual % change in volume of retail sales



Sources: US Census Bureau; Eurostat

There was a trend towards buying environmentally-friendly products and healthy foods although consumers became less willing to buy them at the higher prices at which they were normally sold. Producers launched lower-priced products to avoid losing customers.

Interestingly, while sales of luxuries such as long-haul holidays declined, consumers looked for something less expensive to make them feel good. Purchases of cosmetic items, such as skincare products and fragrances, increased in the recession. Paying by cash, instead of by credit card, gained popularity. 80% of consumers surveyed said they preferred to pay by cash rather than by credit card.

Consumers also began to place more trust in recommendations, searching for information on products in reviews on websites, rather than buying by brand name alone. The recession has made consumers more likely to demand value for money.

(a) In which year in the US did retail sales stop increasing? [1]

Sales stopped increasing after 2007/2008.

(b) Compare the trend in sales between the US and the Euro area between 1999 and 2001. [3]

Sales of both US and Euro area rose, as the percentage change was positive (1 mark). Sales of USA rose faster than the sales in Euro area (1 mark). However, the rate of increase in sales

slowed down in both countries (1 mark). The sales of Euro area rose at a more steady rate than the sales of USA (1 mark).

Maximum 3 marks

(c) Draw a budget line diagram and explain how it might be used to illustrate

(i) lowering the price of a product and

(ii) a fall in income. **[4]**

Budget line shows combinations of two goods that can be purchased at given income and prices. Decrease in the price of a product, e.g. Good x, causes a pivotal shift in the budget line, as shown in Diagram 1. This is because the consumer can afford buying more of Good x at the same income.

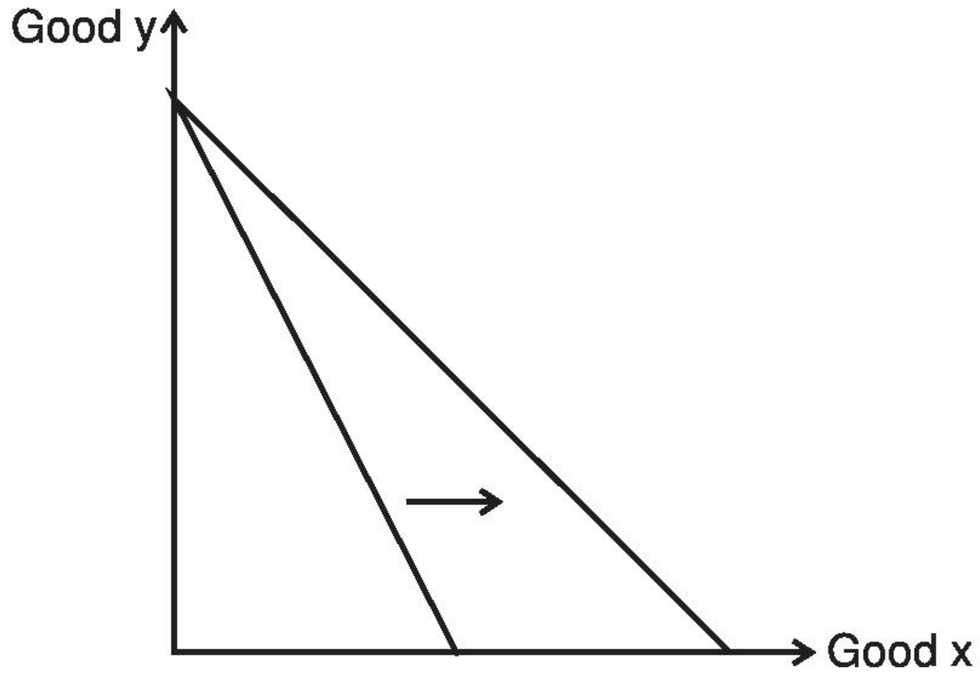


Diagram 1

The fall in income decreases affordability and causes a leftward shift in the budget line, as shown in Diagram 2.

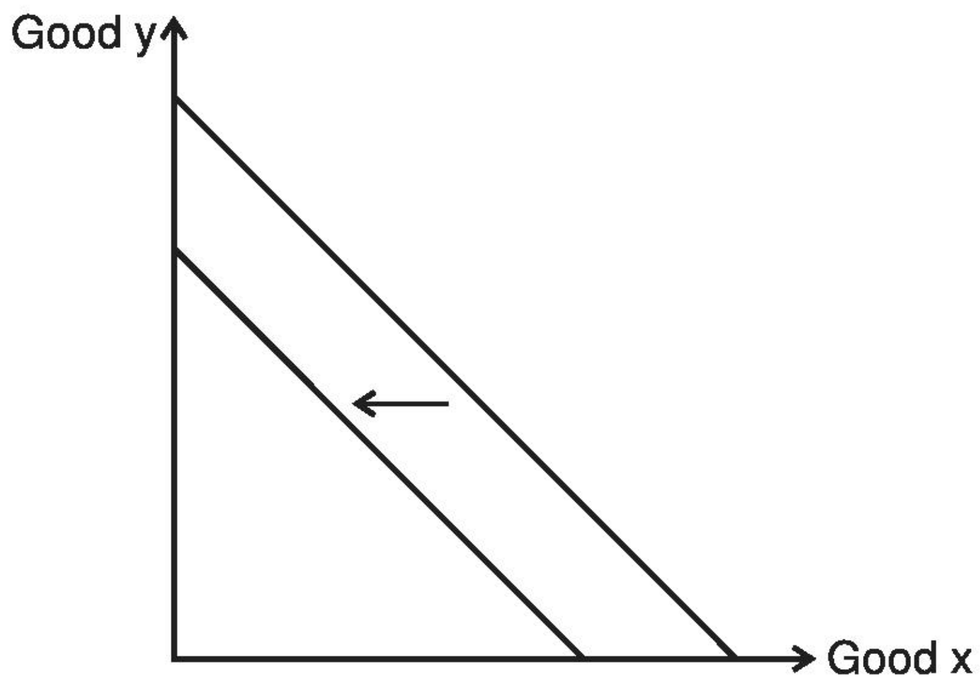


Diagram 2

(d) Briefly explain the equi-marginal principle of utility and consider whether it still applies if consumers pay more by cash and less by credit card. [4]

The principle of equi marginal utility states that a consumer maximizes his total utility by allocating expenditures in such a manner that utility obtained from the last dollar spent is equal for all commodities. Mathematically, it is shown with the help of the following equation:

$$\frac{MUx}{Px} = \frac{MUy}{Py}$$

The consumer compares the marginal utility and price of a product, while deciding the quantity to purchase. The mode of payment, i.e. cash or credit card, is not relevant. However, assuming other factors constant, a consumer may be tempted to purchase more of a product that offers him a facility of deferred payment with the help of a credit card.

(e) Unemployment is often said to be a disadvantage for all businesses. Assess whether the article provides evidence to support this opinion. [8]

Unemployment results in lower income and lower consumer spending. The businesses producing normal goods face a decrease in their sales and profits. The article mentions the decrease in the sales of luxuries such as long haul holidays, and businesses producing these luxuries seem to have lost during a period of rising unemployment. Businesses producing branded products seem to have suffered as well, since consumers are shifting to new products and searching for information on products in reviews on websites. Businesses have spent more money on advertisement and promotion, without much success. This may have also decreased the profits of businesses.

However, businesses producing low quality cheaper products may benefit, as the sales of such products usually rise with unemployment. The article mentions that sales of cosmetic items and businesses producing environmentally friendly products seem to have gained during the period of unemployment. Businesses may also benefit, as high unemployment may enable them to get cheaper labour, resulting in reduced cost and high profits.

The article does not prove that all businesses will suffer during unemployment.

11. (J13/41/01)

1 Macroeconomic decisions: microeconomic effects.

In 2011 many countries experienced a recession. Most industries, even monopolies, in those countries saw a decline in demand, consumer spending and profits. However the decline was less severe in some firms, for example those in the food and beverage industry, than for others, for example those in the leisure industry. This fall in consumer spending and in consumer confidence might have been caused by anticipated job losses as governments announced reductions in public sector expenditure.

Governments decided to reduce expenditure because they had very large budget deficits. Apart from public sector employment reductions the macroeconomic measures they introduced included fewer subsidies, tax increases and a more restrictive monetary policy.

Tax increases did not help businesses. For example they made it more necessary for firms to make the control of any credit they gave a priority, and to monitor their cash flow very carefully. Increasing prices to match indirect tax increases in order to retain profit levels was not always possible when consumer demand was reduced. The alternative of reducing costs was also a problem. Some argued that firms operating with a high proportion of fixed costs found the market conditions increasingly difficult as their revenues failed to recover and the possibility for further cost reductions became more limited. Others thought that firms with a higher proportion of variable costs faced greater difficulties.

Some governments also reduced investment allowances and subsidies to firms. These tax-free allowances enabled firms to deduct some of the investment cost from what they had to pay in tax. However, a reduction in the allowances had no effect on those industries that did not invest in new equipment. It did harm small and medium-sized enterprises that wanted to buy new machinery, or undertake research in order to become more efficient, or improve their products.

The situation was not helped by increased restrictions imposed by the government on banks' ability to lend. These restrictions meant borrowing for house purchases was more difficult and this again reduced consumer expenditure.

(adapted from The Guardian)

(a) Use the information to explain how macroeconomic changes can be linked to microeconomic decisions. [5]

Identification of the macroeconomics changes (1 mark)

The government used tight fiscal policy, choosing to decrease public sector spending and subsidies and by raising taxes. The government also used contractionary monetary policy by putting restrictions on banks' ability to lend.

The effects of these macroeconomics changes on microeconomics decisions (up to 4 marks)

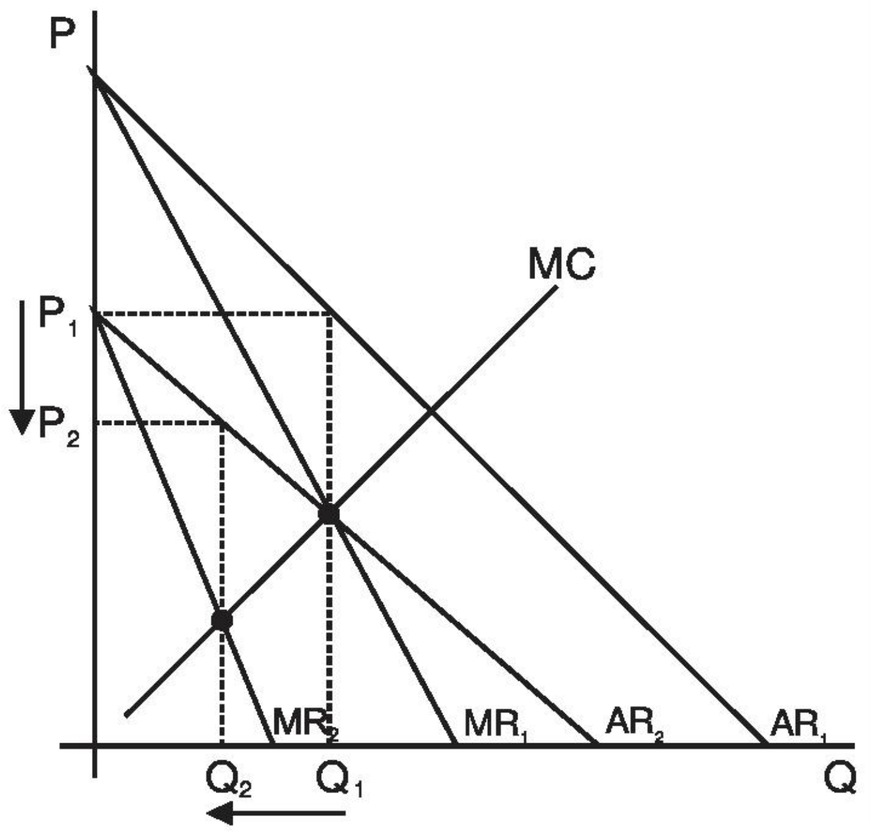
The firms experienced increased cost of production as a result of deceased subsidies and higher indirect taxes so they decreased investments (1 mark).

The inability of firms to raise prices as the demand is already low, resulted in lower profits for the firms (1 mark).

The fear of job losses reduces confidence of economic agents and resulted in a further decline in demand (1 mark).

The reduction in investment allowances will not only decrease private sector investments but also discourage research (1 mark).

(b) Analyse with the aid of a diagram, showing costs and revenue for a monopoly, what is likely to happen to the firm's profits when there is a fall in demand in the industry due to a recession. [5]



Three marks for the diagram.

Average revenue / demand curve shifting towards left (1)

Marginal revenue curve shifting towards left

Lower output which is determined by new MR and MC.

Two marks for the explanation

Decreased demand for the product shifts the demand curve (as well as MR) towards left, resulting in lower output produced by the monopoly (output decreases from Q_1 to Q_2) as the lower MR intersects MC at a lower output level (1 mark) and lower prices.

The profits of monopoly may also decease as it is selling fewer units than before and charging a lower price (1 mark).

(c) Suggest, using the concept of income elasticity of demand, why the decline in profits was less severe during the recession in the food industry than in the leisure industry. [4]

Food is a necessity of life so its income elasticity of demand is likely to be low (1 mark). Thus decrease in income will have little effect on quantity demanded and sales revenues (1 mark).

On the other hand, leisure is a luxury good and its income elasticity of demand is likely to be high (1 mark). Thus decrease in income will have a more than proportionate impact on quantity demanded and sales revenues (1 mark).

(d) Do you support the opinion in the information that a recession is likely to be worse for firms with a high proportion of fixed costs than firms with a higher proportion of variable costs? [6]

Fixed cost, such as rent, interest payment and depreciation, is a component of total cost which does not change with output. Variable costs, such as raw materials, rise with more units produced.

Analysis of the impacts of lower demand on different businesses (up to 5 marks)

Businesses with fixed cost suffer more (up to 3 marks)

Businesses with a higher proportion of fixed cost are likely to suffer more as deceased sales revenues lower profits significantly as total cost largely remain unchanged (1 mark).

Fixed costs are unavoidable costs and deceased output does not reduce costs, hence any drop in sales is more devastating for the firms (1 mark).

The firms with high fixed cost usually have a higher break-even point, meaning they need to produce a larger output to break even. Any decease in demand is likely to convert profits into losses (1 mark).

Businesses with higher variable cost will suffer more (up to 3 marks)

Businesses which have higher variable cost may also suffer when demand falls if their profits were already low (1 mark).

The low demand in the marker reduces the ability of these firms to raise prices and cover the variable cost (1 mark).

Businesses which will not be able to cover the variable cost are forced to shut down immediately / in the short run (1 mark).

One mark for the conclusion.

The firms selling goods with price inelastic demand are likely to suffer less irrespective of the composition of total costs.

12. (J16/42/1)

1 Housing and Economic Growth in the UK

In 2013 a press article reported that 'there has been a marked improvement in the housing market'. Potential buyers of housing had been encouraged because the central bank had fixed interest rates at an all-time low and also by a government scheme designed to give help to people wishing to buy property. The scheme meant that buyers did not have to find such a large deposit.

This caused a positive outcome for the construction industry, with investment and employment rising. However, it pushed up property prices.

In 2013 the average price of a house was seven times the average wage. A study recommended that the central bank should take steps to prevent house prices rising by more than 5% a year and should limit the amount people could borrow relative to their incomes. There should be regional variations to this limit, as property prices do not increase at the same rate in every region.

However, a deputy governor of the central bank said that limiting price rises would not solve the cause of the problem, which was the lack of new property development. He found it surprising

that the study chose to focus exclusively on the demand side when the underlying problem was one of supply.

An economist said that the most effective intervention a government can make in the housing market is to relax the planning system and make it easier and cheaper to build more homes. Increased supply, leading to lower prices, would encourage demand. Others said that 'although there is talk of a large rise in the price of houses, it is not uniform throughout the country and trying to influence the basic laws of supply and demand is not the right way of tackling the problem.'

The buying of housing gives rise to increased consumer spending and some argue that this helps the economy. Although policies by the government and the central bank had increased consumer demand and spending, such expenditure is quite different from the export-led growth model preferred by the government. Analysts suggested that the demand and supply conditions causing the current situation cannot last forever. When they end, the effect on the housing market (which by then will have many people with very high debts) will be very bad for the economy. This can be seen in countries such as Spain and the Netherlands, where property values are in decline.

Source: The Times, 14 September 2013

(a) Identify two government policies in the article that could encourage an increase in aggregate demand. [2]

The government has fixed the interest rate at an all-time low and also reduced the requirements of initial deposit for house purchases. Both steps encouraged households to spend more, and raised aggregate demand.

(b) The article states that there has been a 'marked improvement in the housing market'.

Using the article and your own knowledge, explain how an economy might benefit from an 'improvement in the housing market'. [5]

Economic growth is increase in national income. Improvement in the housing market raises demand for houses, which will create employment opportunities in the construction industry as well in the ancillary industries such as steel, cement, glass, wood, flooring material, aluminum, furniture, electronics and many more. The increased employment and income opportunities encourage consumers and firms to spend more. This injects aggregate demand into the economy and helps raise national income by a larger amount because of expenditures multiplier. There will be greater impact on real GDP if excess capacity and unemployed resources are available. However, injection of aggregate demand may trigger inflationary trends in a fully employed economy having a steeper aggregate supply curve.

(c) Using the evidence in the article, assess whether it contradicts the view that an increase in house prices is an improvement for an economy. [6]

Increase in house prices does not necessarily improve the economy. The increase in average house prices is seven times the average wage, meaning a majority of the population will not be able to afford the houses. It seems that the poor people are priced out of the housing market, which raises the gap between the rich and poor, and reduces living standards. High house prices

also force an average household to borrow a greater sum to finance the purchase of houses, leading to greater debt and financial stress. The high prices of houses may not sustain in the long run and the housing market may collapse in the future, initiating a financial crisis as already happened in Spain and Netherlands.

(d) The article contrasts a model of an increase in growth through consumer spending with a model of an increase in growth through exports.

Choose two macroeconomic aims of a government and discuss how the two growth models might have different effects on those aims. [7]

One of the macro economic objectives of a government is economic growth and more employment. The other macroeconomic objective could be to improve trade balance.

The increased consumer spending injects aggregate demand into the economy, and through a multiplier effect, leads to a larger increase in national income and employment. However, injection of demand will have a greater effect on real output only if excess capacity and unemployed resources are available. The increased consumer spending may not be able to raise aggregate demand, as, instead of locally made goods, consumers may prefer imports, which may raise import expenditures and worsen the trade balance.

Export led growth will be achieved by raising net exports. Aggregate demand will rise as net exports are a component of aggregate demand. The increased aggregate demand creates employment opportunities and helps achieve economic growth. Unlike increased consumer spending growth model which raises trade deficit, the model of export led growth improves trade balance.

However, both models will create employment opportunities and lead to economic growth.

13. (ON08/4/1)

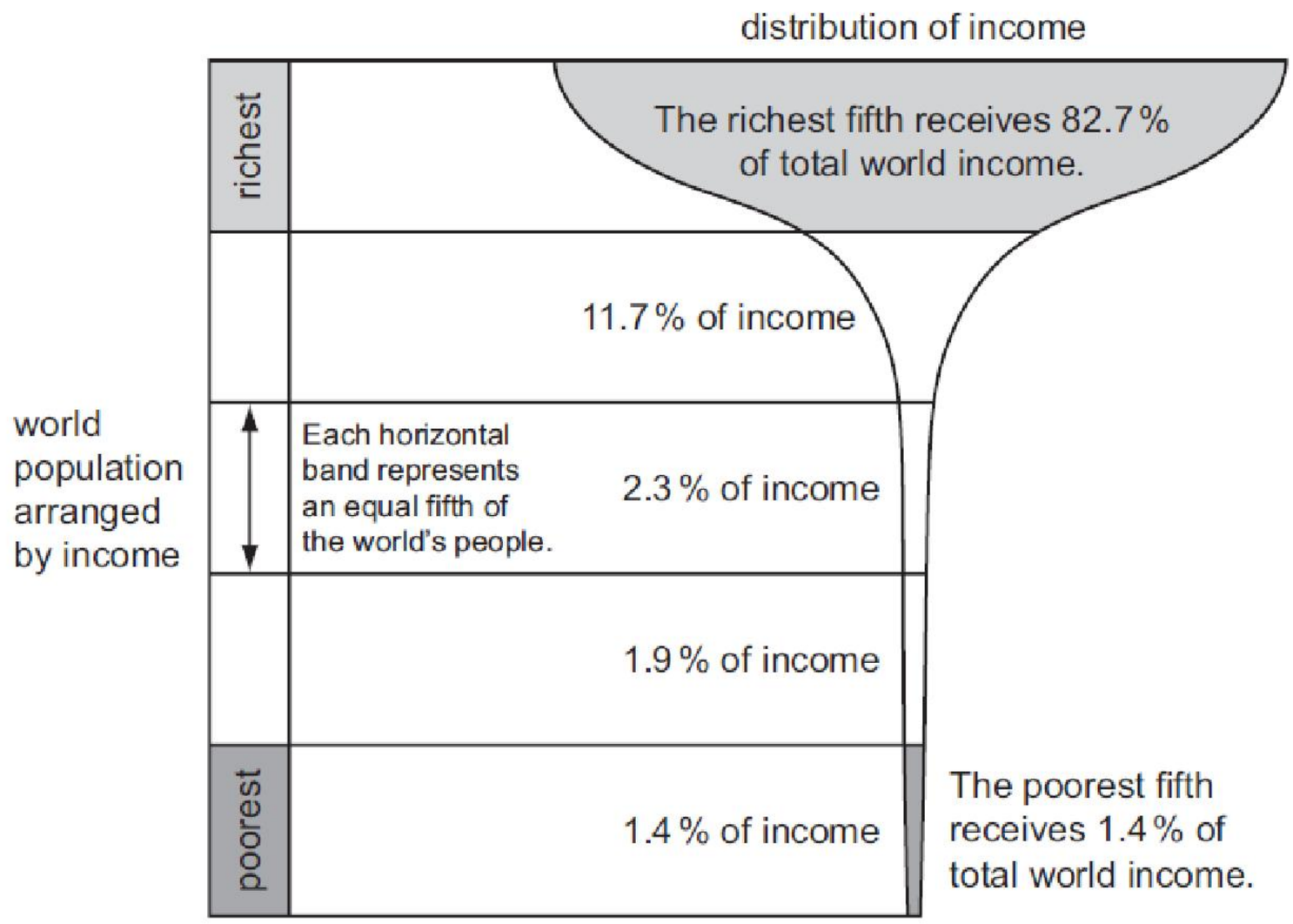
1 Poverty and Economic Growth

At a time when there has been rapid economic growth in some parts of the world, there are many countries in Africa in which severe poverty and infectious diseases are still widespread. In dealing with the poverty in developing countries much is written about the need for aid from the rich developed countries. The high profile given to aid hides the fact that financial, human and other resources are continuously taken from developing countries by these wealthy nations which are seeking their own economic growth.

Economic growth in the last 50 years has occurred at the same time as a widening gap both between rich and poor people in a country and between rich and poor countries. Economic growth and development should be reconsidered to include a more even progress in areas such as basic living conditions, access to health care and education.

Despite the economic growth, almost half the world's population still lives in poverty on less than US$2 a day. This reveals a weakness in the argument that economic growth is the solution to poverty.

Fig. 1 Global income distribution


distribution of income
richest
The richest fifth receives 82.7 % of total world income.
11.7 % of income
world population arranged by income
Each horizontal band represents an equal fifth of the world's people.
2.3 % of income
1.9 % of income
poorest
1.4 % of income
The poorest fifth receives 1.4 % of total world income.

(a) Explain briefly what is meant by economic growth. [3]

Economic growth is a process of increasing employment and national income (1 mark). It indicates increased production capacity/capability of an economy (1 mark). A move from inside PPC towards PPC indicates reduction in unemployment and increase in actual growth, whereas, a rightward shift in PPC indicates potential economic growth (up to 2 marks).

(b) Explain the possible link between developed and developing countries in achieving growth. [5]

Developed countries are buyers of goods produced in developing countries (1 mark). Increased income and prosperity in developed countries encourage their citizens to spend more on locally made goods as well as on imports from developing countries (1 mark). This injects demand in the economies of developing countries and shifts expenditure functions upwards, leading to a larger increase in national income due to the expenditure multiplier (1 mark).

Developed countries can also affect the growth of developing countries by giving them aid (1 mark). This aid, if properly utilized, may contribute in the development of infrastructure and producing healthy and educated labour/work force (1 mark). This leads to increased production possibility for developing countries and economic growth (1 mark).

(c) Analyse whether Fig. 1 supports the statement that 'almost half of the world's population still lives in poverty on less than US$2 a day'. [5]

Fig.1 does not provide a clear definition of poverty (1 mark). $2 a day may have different purchasing power as different countries have different costs of living (1 mark). However, the skewed distribution of income supports the statement that majority of people have access to low levels of income (up to 2 marks). The data in fig.1 also fails to reveal the trend of these changes so no comment on the word "still" can be made (1 mark).

(d) The extract concludes with the statement that 'there is a weakness in the argument that economic growth is a solution to poverty'. Discuss whether this is a correct conclusion from the evidence given. [7]

Growth in developed countries has increased national income and may have decreased poverty in developed countries (1 mark). The increased income of developed countries may have enabled them to buy more goods from developing countries and give them more aid, helping to reduce poverty in developing countries (up to 2 marks). There may still be poverty, but the situation may have been worse without growth (1 mark). However, a significant number of people earning less than $2 a day justifies the argument to an extent that growth has failed to reduce poverty (1 mark). The conclusion drawn in the statement may not necessarily be correct as economists do not agree on the definition of poverty, and the data also fails to give evidence about the rising inequalities in the distribution of income (up to 2 marks).

14. ON14/P43/Q1

1 Tax rates and growth

It is suggested that lower tax rates will cause economic growth. If the marginal tax rate is cut and disposable income rises, labour has more incentive to work additional hours to increase their earnings, and entrepreneurs may invest in a new enterprise. The question is whether these incentive effects are large. If they are, they could cause a sustained increase in economic activity and growth. This idea is one of the key features of supply-side economic policy.

If, however, the incentive effects are small then the outcome would be quite different. Cutting taxes would raise output in the short run by putting money in people's pockets which would allow them to increase their spending. This would cause a temporary inflationary demand-side effect. If the effect is small, cutting taxes would not raise output on the supply side in the long run.

Since 1945, the top rate of income tax in the US has varied from more than 90% to less than 30%. There does not appear to be any consistent link between these tax rates and economic performance. Tax rates were lower in the 1960s than the 1970s, and economic growth was higher in the 1960s than the 1970s. However, tax rates were higher in the 1990s than the 2000s, and economic growth was higher in the 1990s than the 2000s.

Of course, many other factors affect economic growth so a lack of a consistent link between tax rates and economic growth does not prove that tax rate changes have little or no effect. A useful measure of the supply-side effects is what happens to hours worked as a result of the marginal tax rate change. Governments are also interested in the effects of tax changes because they wish to calculate the amount of revenue they could collect.

If people work longer when the tax rate is reduced, then their income will rise. Those who believe in supply-side economic policy say that this response to marginal tax rate changes is greater than

one. This implies that changes in government revenue will have a similar effect to changes in a firm's revenue if it has a price elasticity of demand greater than one.

However, a review of several income groups after recent tax changes concluded that the best estimate of this response to tax rate changes ranges from 0.12 to 0.40 and is not greater than one. There is an alternative proposed to tax rate changes as a means of raising revenue which is to remove opportunities for tax avoidance.

Source: International Herald Tribune, 2012

(a) Explain what is meant by economic growth. [2]

Economic growth is an increase in real national income / real GDP. It happens when the rate of increase in national income is positive. Economic growth could be actual i.e. when economy moves from inside PPC towards PPC, or potential when PPC shifts outwards.

(b) Explain why cutting tax rates is considered a supply-side policy. [3]

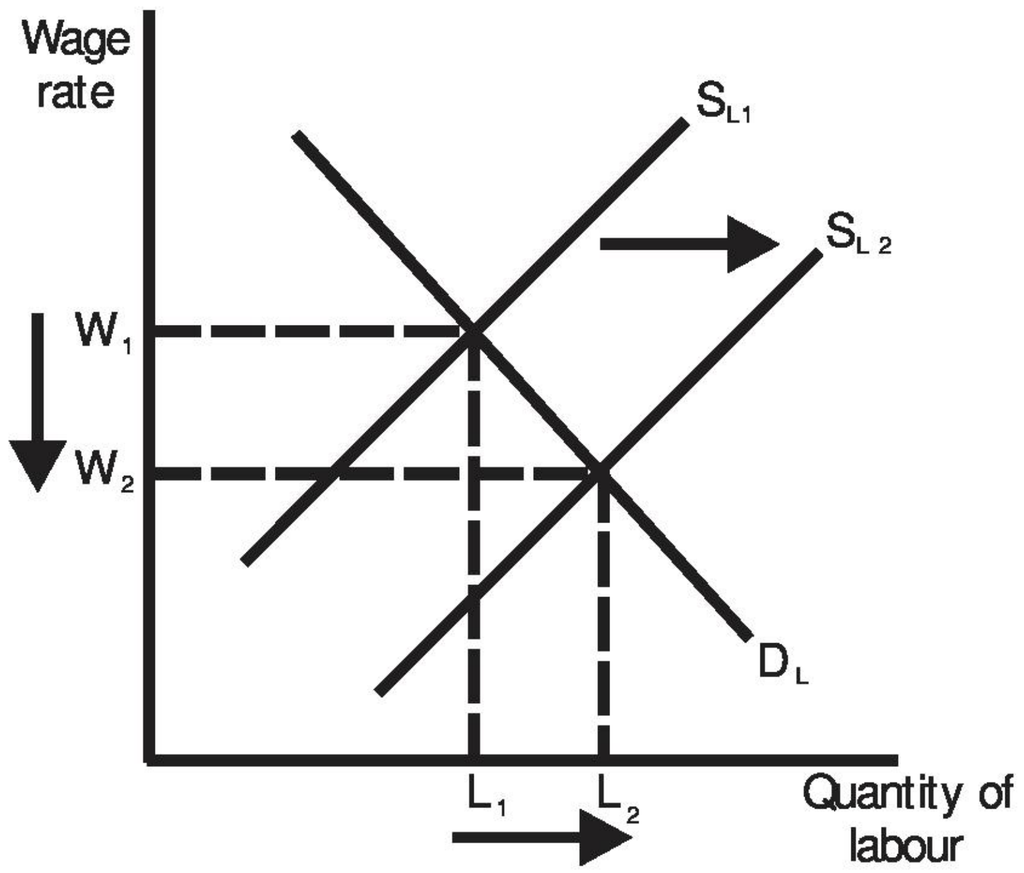
Reduction in tax rates increases post tax wages and incentivizes workers to work for longer hours provided the labour supply curve is upward rising. However, in case of a backward bending supply curve, reducing tax rates may lead to a fall in labour supply.

Reduction in tax rate also raises post-tax profits of firms and encourages them to set up new factories and expand the existing ones, leading to greater output.

(c) Analyse, with the aid of a diagram, how the supply of labour might change as the marginal rate of income tax falls. [4]

Marginal rate of income tax is the tax rate applicable on an additional income bracket. The supply curve of labour shows the relationship between wage rate and the number of hours supplied. It is initially upward rising when workers supply more labour hours if wages increase. However, beyond a certain wage increase, the labour supply curve becomes backward bending when workers choose to work for fewer hours in response to a wage increase.

Reduction in marginal rate of tax shifts the supply curve of labour downward, as at every wage, workers now receive a larger income. It will encourage workers to supply more labour hours at every wage, as shown in the following diagram.



(d) Explain, using the information above, what would happen to government revenue if tax rates were reduced, and the response to marginal tax rate changes is greater than one. [4]

The government tax revenue is a product of tax rate and national income. A reduction in tax rate may raise tax revenues if the incentive of tax reduction encourages workers to work for a greater number of hours and earn more income. Tax revenues will rise when the percentage increase in income (if reduction in tax rates has a proportionately greater effect on number of work hours) exceeds the percentage fall in tax rate. It is similar to the case of a firm whose sales revenues rise if the percentage increase in the quantity sold exceeds the percentage decrease in the sale price. This happens when the demand for the product is price elastic.

(e) Discuss whether the evidence from the data shows that economic growth is improved by tax reductions. [7]

According to the article, a reduction in tax rate raises national income through demand side effects. Tax reduction raises disposable income and encourages consumers to spend more. Decrease in tax rates also encourages more investments. Higher consumption and investment results in increased aggregate demand and leads to a larger increase in real GDP if excess capacity is available. Reduction in tax rates also provides greater incentives to work, encouraging workers to work for more hours and encouraging firms to expand and invest in new businesses, leading to a rightward shift in the aggregate supply curve and increased output. The demand side effects work more in the short run, whereas the supply side effects are likely to have an impact in the long run.

However, the date from the US economy does not support a direct link between reduction in tax rate and economic growth. Also, it is mentioned that workers response to a tax cut is pretty low (around 0.12 to 0.4), meaning a ten percent tax cut encourages worker to increase working hours by maximum 4%. This contradicts the view that cuts in taxes have a significant effect on the number of labour hours and economic growth.

Economic growth is the outcome of a variety of factors, and it is hard to estimate the exact impact on economic growth if tax rates are cut.

15. N16/42/1

1 Risks of reduced US monetary stimulus

The US Central Bank (the Federal Reserve) announced in January 2014 that it would reduce its quantitative easing (QE) by cutting its monthly bond purchases by another $10 billion. It said that it was optimistic that 'the economy is about to start growing faster and there is underlying strength in the wider global economy'. It had set interest rates near to zero.

This policy of the Federal Reserve contributed to a global shift in investments. Turkey, for example, which depends heavily on foreign investment, tried to bolster its currency by raising its interest rate to attract funds, but this did not work.

The Federal Reserve, however, was thought to be unlikely to adjust its own policy in response to the problems in other countries unless it saw evidence that the problems were affecting the US domestic economy. Indeed the problems in countries such as Turkey may have made it easier for the Federal Reserve to reduce its expenditure on bonds. Investors seeking to limit their risks were bidding up the price of US bonds, counteracting the effects of the Federal Reserve's gradual reduction in the volume of its own purchases.

The prospect of a future rise in US interest rates caused worrying declines in investment in emerging markets. China's Deputy Finance Minister argued that the US has a responsibility beyond its own domestic economic concerns, saying 'We hope that as the issuing country of the largest reserve currency in the world the US should be mindful of the wider effects of its macroeconomic policies'.

The Deputy Finance Minister added that balance of payments problems in the developing world are partly due to lack of domestic economic reform there. This was supported by a British official who said that emerging economies had been helped by cheap money from the advanced countries but this disguised the need to follow through on fundamental reforms in some countries. Currencies of countries such as India, Indonesia, Turkey and Brazil have been under particular pressure because of their current account deficits.

A US official said that strong US growth is good for the global economy and responded to criticism of the Federal Reserve's handling of QE: 'I think that what has been demonstrated is that we've pursued a pro-growth policy that we believe is ultimately good for the global economy. Because when the US economy is growing, it helps to provide momentum more broadly'.

Source: International New York Times, 30 January 2014

(a) Explain what is meant by monetary policy and give two examples of monetary policy from the article. [3]

Monetary policy refers to charging interest rates, exchange rate and money supply to reduce inflation and unemployment. Examples of monetary policy given in the article include quantitative easing, exchange rate and interest rate.

(b) What is meant by 'the economy is about to start growing faster'? Explain how a stronger global economy could help to achieve this. [4]

Rapid economic growth means that the national income is not only rising, but rising at a faster rate i.e. the rate of economic growth is positive and rising.

A stronger global economy increases the purchasing power of an average citizen in most of the countries, leading them to buy more locally produced goods as well as imports. This would result in an increase in US exports. Increased exports would inject demand in the US economy and shift the aggregate demand curve towards the right. This would cause a larger increase in output and employment through a multiplier effect. Increased exports may also result in higher demand of US dollars in the forex market, leading to appreciation of the US dollar. Appreciation of currency may help control inflation and achieve a rapid economic growth.

A stronger global economy would mean that, like other rich countries, the US would have to spend less money in assisting poor countries as rapid economic growth is likely to make them more self-sufficient. This would reduce the burden on US resources and help the US government to reduce taxes and/or allocate more resources to domestic requirements, helping achieve a faster economic growth.

(c) Consider how far the reason suggested in the extract could explain the pressure on the currencies of India, Indonesia, Turkey and Brazil. [6]

India, Indonesia, Turkey and Brazil are facing Balance of Payments (BOP) difficulties. A deficit of BOP means that the exports of goods and services and capital inflows in the form of borrowings and investments fall short of the same. A BOP deficit would mean that the demand for national currency would be less than its supply in the foreign exchange market. The resulting surplus of the currency may lead to depreciation of currency.

The decision of Federal Reserves US to decrease bond purchases will reduce bond prices and increase interest rates (bond prices and interest rates are inversely related). Higher interest rates will attract capital inflows in the US, increasing the demand for US dollar and supply of currencies of other countries. This will also put a downward pressure on the currencies of India, Indonesia, Turkey and Brazil. The failure of these countries for domestic reforms has also led to rising imports, rising supply of national currency, and falling value.

Though the article explains that Turkey depends heavily on foreign investments, it fails to explain how closely the other three countries are dependent on the US economy, and how interlinked their currencies are to the US economy.

(d) Suggest what effect the Federal Reserve's decision to reduce its bond buying by $10 billion a month could have on the US economy. [7]

The decision of Federal Reserves US to reduce bond purchases intends to reduce money supply in the economy, as the banks and individuals will be forced to have more illiquid assets such as bonds. The decreased demand for bonds reduces their market price and increases the interest rates. High interest rates raise the cost of borrowing and reduce investments in existing and new businesses. High interest rates also increase the reward for savings, prompting consumers to save more and spend less. Decreased consumer and investment spending withdraws aggregate demand. The leftward shift in the aggregate demand curve causes a larger decrease in national income through negative multiplier effect, and slows down economic growth.

Higher interest rates attract capital inflows from other countries, raising the demand for US dollar. The US citizens become less keen to invest money in other countries, which reduces the supply of US dollars in the foreign exchange market. The increased demand and decreased supply of US dollars makes the US dollar stronger. The appreciation of the US dollar makes exports

expensive and imports cheaper, which encourage consumers to switch from US goods to goods made in other countries. This results in a fall in net exports and worsening of trade balance.

16. (N17/41/1)

1 The United States (US) Economy

According to the Bureau of Economic Analysis, in the US in the first quarter of 2015, the real Gross Domestic Product (GDP) increased at an annual rate of 0.2% compared with an increase of 2.2% in the fourth quarter of 2014. The increase reflected positive contributions from consumption expenditure and company investment. These were partly offset by negative contributions from exports and government spending. Imports, which are a subtraction in the calculation of GDP, increased. Some selected changes in GDP contributions are shown in Table 1.

Table 1 Selected changes in US GDP components

% annual changes in selected components of US GDP	4th quarter 2014 %	1st quarter 2015 %
Consumption expenditure	+4.4	+1.9
– Durable goods	+6.2	+1.1
– Non-durable goods	+4.3	+0.3
Exports	+4.5	–7.2
Government expenditure and investment	+1.6	–1.5

The slower overall growth of GDP in the first quarter of 2015 may have been linked to changes in other countries. China's economic growth rate was reported to have dropped from over 10% to 7%; the Russian economy was affected by low oil prices and economic sanctions; Brazil was experiencing high inflation and low business confidence; Canada's economic growth rate was predicted to decrease because of lower oil prices.

In addition to changes in other countries, business spending in the US on equipment, machinery and buildings decreased. There was, however, some revival in consumer confidence. House prices rose on average by 5% and a rising demand for housing was expected to continue. The labour market appeared to be improving with unfilled job vacancies at their highest level since 2008. Larger companies were reported to be about to offer pay rises to their lower paid workers. Wage growth, however, has to be paid for somehow and executives said that they had little room for cutting other costs. This, together with fierce competition, made it difficult to increase prices: cuts in profits seemed more likely.

Source: Sunday Times, 3 May 2015

(a) What is meant by real Gross Domestic Product? [3]

Real GDP is the volume of goods and services a country produces in a year. It increases only when money income rises faster than price level. To convert money income (Income at current prices) into real GDP (Income at constant prices), money income is deflated by multiplying it with the ratio of price index of the base year and price index of the current year. GDP includes

Consumption (C), Investment (I), Government Spending (G) and Exports (X), whereas Imports (M) are excluded.

(b) Analyse why the 'changes in other countries' may affect the rate of growth of GDP in the US. [4]

The slow growth rate in countries reduces the purchasing power of an average citizen of those economies, forcing them to reduce spending on locally made goods as well as on imports. This may result in falling exports of the US to countries such as China, Russia, Brazil and Canada. Decreased exports withdraw demand and shift Aggregate Demand towards the left, which may lead to falling output and rising unemployment. Decreased exports may also result in low demand of US dollars in the forex market, leading to depreciation of the US dollar.

The slow growth rate in certain countries raise unemployment and may lead to emigration to more developed countries such as the US. The US may thus have rising labour supply from other countries. Also, the imported raw materials may become cheaper for the US, as prices may be falling in other countries because of slow economic growth.

The US and other rich countries may have to spend more money in aiding economies suffering from low economic growth and high unemployment. They may also have to give them loans or extend the repayment period of loans already granted. These will burden and strain US resources and tax payers may resent.

(c) Apply the circular flow of income model to the information in Table 1 to discuss why the increase in the US GDP in the first quarter of 2015 was lower than the increase in the last quarter of 2014. [6]

In the circular flow of an economy, firms earn revenues and profits by selling goods and services in product markets and spend them on hiring factor services in the input / factor market. On the other hand, the households earn incomes by providing factor services and spend them on buying goods and services in the product market. Though the consumer expenditure and company investment have increased, they have been outweighed by a fall in exports and government spending. However, it is difficult to determine the exact change in aggregate demand as absolute values of different components of aggregate demand are not available. It seems, however, that the slower economic growth is a consequence of decreased aggregate demand. As expenses lead to a series of income flows for others, the withdrawal of demand through falling exports and government spending may have led to a fall in real output through a multiplier effect.

(d) Discuss whether there is any evidence in the information to suggest that the US could have expected a higher rate of growth in GDP in the first quarter of 2015 than that which occurred. [7]

The US was justified in expecting a higher rate of growth in GDP as house prices were rising, indicating greater customer confidence and affordability. The labour market was also showing signs of improvement and the rising number of unfilled job vacancies was reflective of falling unemployment. Wages were rising, which could have been the result of rising profitability of businesses and coupled with low inflation rate could have led to further increase in demand. Lower inflation rate would make exports comparatively cheaper, resulting in higher demand for net

exports, higher aggregate demand and higher economic growth. Falling oil prices, resulting in lower cost of production, were likely to encourage more investment and faster economic growth.

However, the information also indicates that the government spending and exports were falling, leading to lower aggregate demand and a slowdown of economic growth. The fierce competition made it difficult to increase prices, and according to business executives, they had little room for cutting their costs, resulting in lower profitability, and hence, lower investments and lower economic growth.

17. (N16/43/1)

1 Interest rates and economic growth

In January 2014 Turkey's central bank agreed to a large increase in its main interest rate from 4.5% to 10% in order to try and strengthen Turkey's currency, the lira. Financial markets did not react much to the increase.

The morning after the interest rate increase in Turkey there was an initial rise in the lira but by the afternoon demand for the lira had fallen. The interest rate rise was an attempt by the Turkish central bank to slow down inflation and increase the demand for the lira by offering a better return. However, higher interest rates threatened to hinder economic growth by raising the cost of borrowing. A spokesman from the Turkish Currency Exchange said that the Turkish economy was not strong enough and if the lira was weak it would have an impact on all aspects of daily life.

A similar policy was adopted by the South African central bank, which increased its main interest rate from 5% to 5.5%. This also failed to prevent a decline in the value of that country's currency, the rand. Some analysts said the increase in interest rates in South Africa was more to control inflation than to support the exchange rate.

Currency traders also sold their holdings of currencies of other emerging countries such as Russia and Argentina. The Russian currency, the rouble, fell 1% against the dollar in January 2014 to its lowest point since 2009. Currency traders were less inclined to deal with countries that they regarded as being poorly governed or had major public protests. These included Russia, Argentina, Ukraine and Thailand.

Some argued that the decline in developing countries' currencies could adversely affect developed economies such as the US, Europe and Japan because the developing countries would not have the same purchasing power and would buy fewer imports. European countries have a great dependency on exports to developing countries.

Meanwhile, policy makers in developing countries face a problem. They cannot raise interest rates without endangering economic growth and in any case raising interest rates, it appeared, did not convince currency traders that the high rates would be maintained in the long term. Instead currency traders preferred to put money back into the developed countries, which were seen to be less risky.

Source: International New York Times, 30 January 2014

Table 1: Key economic indicators for selected countries, May 2014

	Interest rate %	Inflation rate %	GDP growth %
Argentina	14.9	10.9	1.4
Brazil	11.0	6.3	1.9
Germany	0.25	1.3	2.5
Russia	7.50	7.3	0.9
South Africa	5.5	6.1	2.0
Turkey	10.0	9.3	4.4
UK	0.5	1.8	3.1

Source: http://www.tradingeconomics.com/ accessed 21 May 2014

(a) Explain what is meant when it is said that Turkey and South Africa hoped that an increase in interest rates might 'strengthen' their country's currency. [2]

Increased interest rates raise return on savings/investment in the currency, attracting financial inflows. Increased demand of currency raises its value and makes is stronger.
Or
Increased interest rates force consumers to reduce spending on locally made goods as well as on imports. Decreased demand of imports decreases the supply of currency and raises its value.

Or
Increased interest rates help control inflation and make locally made goods more price competitive both at home and abroad, raising net exports. Increased net exports raise demand of currency and make it stronger.

(b) Distinguish between monetary policy and fiscal policy and give two examples of fiscal policy. [4]

Fiscal policy is a manipulation of government spending and taxes, whereas monetary policy uses money supply and interest rates to achieve macroeconomics objectives, such as reducing unemployment and stabilizing price level. Fiscal policy causes a direct change in aggregate demand as government spending is a direct component of aggregate demand and taxes also directly affect consumption and investment through changes in disposable income. However, monetary policy indirectly affects aggregate demand through changes in interest rate.

(c) Discuss how far the information in Table 1 can be used to support the statements in the extract about the links between high interest rates, inflation and economic growth. [6]

The table provides data for only a year, so changes in interest rates and their effects on inflation and GDP growth rate cannot be analysed. However, it seems that the high interest rates in Argentina, Brazil and Turkey have not been able to influence inflation rate, as all three of them experienced high inflation even with higher interest rates. High interest rates in UK and Germany seem to be more effective in controlling inflation in these countries. Thus, there is no consistent correlation between interest rate and inflation rate.

Similarly, the link between interest rate and economic growth is also unclear. For example in the case of Argentina, high interest rate has led to slower economic growth, but Turkey experienced the highest growth rate among all countries even with a high interest rate of 10%.

(d) How far does the experience of the countries mentioned in the extract support the view that higher interest rates benefit macroeconomic performance? [8]

High interest rate raises the cost of borrowing and reward for savings, encouraging more savings and less consumption and investment. Aggregate demand falls, which may help control demand-pull inflation. However, high interest rates discourage consumption and investment, resulting in withdrawal of aggregate demand. This is likely to slow down economic growth. High interest rates also raise exchange rates as they attract financial inflows in the currency.

However, Turkey and South Africa have not been able to win an increase in exchange rates even after raising interest rates. It was observed that people were reluctant to invest in currencies, even if a high rate of return was offered, as they expected currencies to lose value over time. Higher interest rate alone, thus, may not be enough in attracting savings into a currency, as confidence in the currency is also a key factor.

Countries also face a tradeoff in achieving different macro-economic objectives, as raising interest rate may help to control inflation but may slow down economic growth. Similarly, the attempt of a country to strengthen its currency by raising interest rate may also trigger recession.

18. (J14/42/1)

1 Telecommunications in India

In India, until the late 1990s the Government held a monopoly on all types of telecommunication (telecom). The industry had a small-sized market. In the twenty-first century the industry switched to private sector ownership. The telecom industry then experienced rapid growth, less restrictive regulations, greater technological developments, reduced costs of equipment and competition. Telecom became one of the major contributors to India's economic growth and one of the fastest growing industries in India.

When it was in the public sector, the telecom industry recorded only a marginal increase in customers – on average 1.92% a year. After privatisation and the relaxation of regulations, the annual increase reached 36.9% in 2009. By 2009 India was second in the world only to China in terms of wireless network customers.

The industry emerged as crucial to India's economic growth because of its multiplier effect and the fact that it is beneficial to other industries. The contribution of the industry to India's GDP has more than doubled to 2.83% in 2007 from 1.0% in 1992.

Much of this growth was caused by a large increase in cell (mobile) phone customers which grew at a rapid rate from 10 million in 2002 to 392 million in 2009. There is a direct correlation between the growth in cell phone customers and the growth in GDP per capita in developing countries, which tend to have a high percentage of the population living in rural areas.

The Indian telecom industry now has intense competition and continuous price wars from a growing number of telecom service providers.

The government has been applying suitable fiscal and promotional policies to boost domestic demand to help Indian firms.

Fig. 1 The significance of the Telecom Industry to India

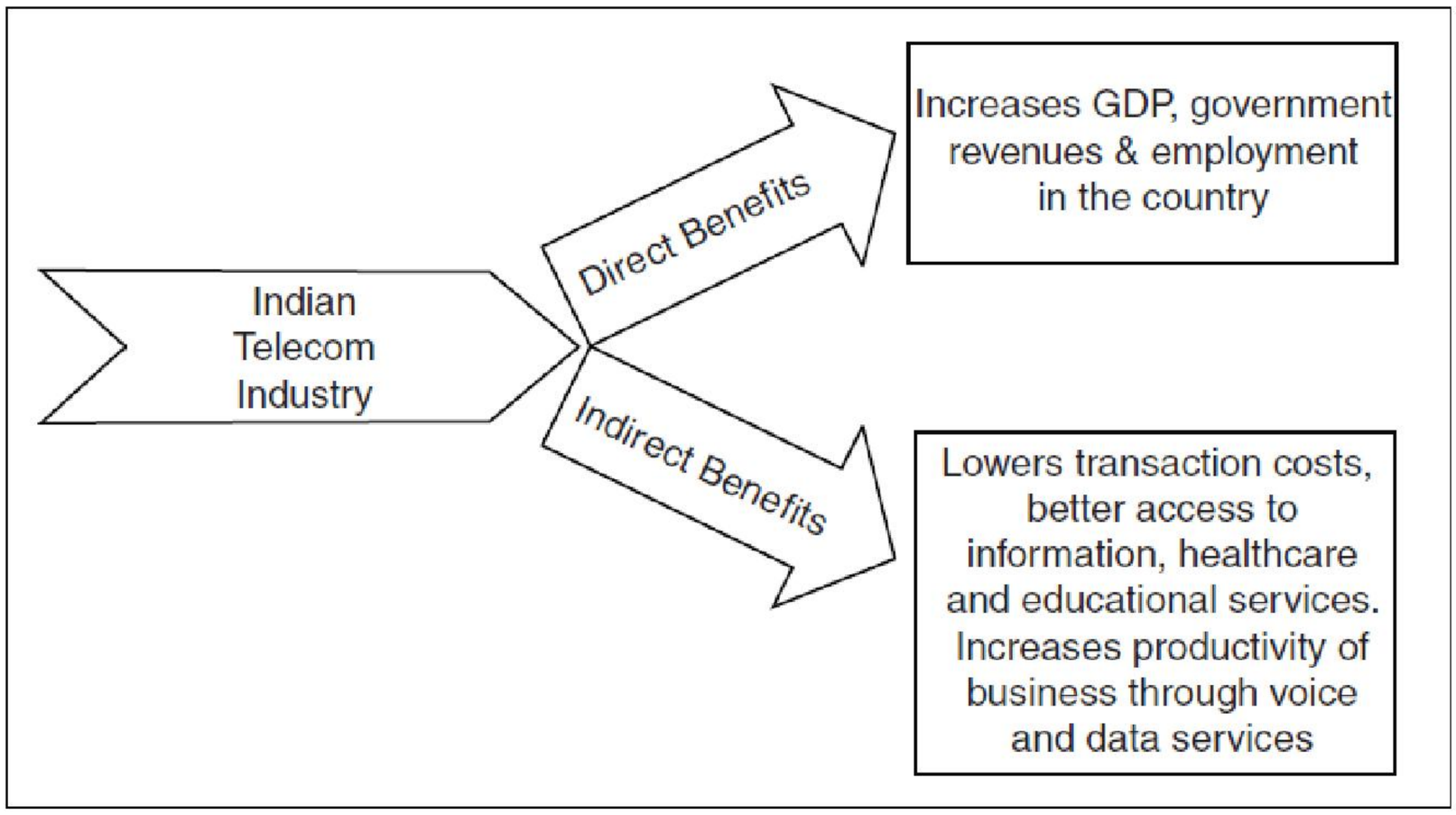

Indian Telecom Industry
Direct Benefits
Indirect Benefits
Increases GDP, government revenues & employment in the country
Lowers transaction costs, better access to information, healthcare and educational services.
Increases productivity of business through voice and data services

Table 1: The significance of the Telecom Industry to India

	2004–5	2005–6	2006–7
GDP at factor cost (2007 prices) Indian Rupees billion	28 439	32 006	37 175
Total Telecom Revenue Indian Rupees billion	716	867	1053
Contribution of Telecom to India's GDP	2.52%	2.71%	2.83%

Source: http://www.dnb.co.in

(a) Table 1 shows GDP at factor cost. What is the difference between GDP at factor cost and GDP at market prices? [2]

To obtain GDP at market prices from GDP at factor cost, indirect taxes should be added (1 mark) and subsidies should be deducted (1 mark).

(b) (i) The extract says that India's telecom industry was crucial to growth because of its multiplier effect. With the help of a numerical example explain what economists mean by 'the multiplier effect'. [5]

An explanation of the multiplier effect commenting on change in national income as a result of a change in injection (2), an explanation of numerical example, 1 for formula, 1 for calculation, 1 for impact (3) (5 total).

A change in autonomous expenditures / demand injections lead to a series of income flows, as, in a circular flow of national income, expenses incurred by one become the income of the other, influencing more spending, resulting in more income for others, and the cycle continues. Thus, the initial increase in expenditures is multiplied and results in a larger increase in national income. (Up to 2 marks)

At every stage, a portion of income is withdrawn in the form of savings, taxes and imports. The higher the withdrawals, the lower will be the size of the multiplier, whose numerical value can be calculated, using the formula:

$$\frac{1}{1-\text{mpc}} \text{ OR } \frac{1}{\text{mpw}}$$

(1 mark for the formula)

where mpc is marginal propensity to consume and mpw is marginal propensity to withdraw

The initial increase in expenditure, e.g. by 10, raises national income by 50, if mpc is 0.8, as the expenditure multiplier is 5, in this case. (Up to 2 marks)

(ii) Use the information to explain how India's telecom industry had a beneficial effect on the Indian economy. [5]

India's telecom industry is directly benefitting India's economy by creating employment opportunities and raising national income. According to Table 1, the industry has contributed approx. 3% to the national income of India. The industry is also raising the productivity of businesses by helping them to communicate more effectively with the stakeholders, as they have access to better voice and data services. Fig.1 also mentions the contribution of the telecom industry to education and government revenues. The possibility of virtual libraries, classrooms, YouTube, and increased possibilities to do research while sitting in the comfort of one's own house/office has revolutionized education and greatly benefitted the sector. The telecom industry has also contributed generously to the revenues of the government, in the form of direct taxes (taxes on the income of labour directly and indirectly employed by the telecom industry), corporate taxes (taxes on the profits of telecom businesses) and indirect taxes (taxes paid by consumers while getting a top-up or while buying other telecom services).

Note: Candidates should give an explanation of the effects mentioned in Fig.1 and Table 1. Maximum 3 marks for one well-developed point (Up to 5 marks).

(c) Consider how far the success of India's telecom industry has been because of the change from public sector monopoly to private sector competition. [8]

The privatization of the telecom industry has increased competition, which has not only helped improve the quality of service, but also reduced prices for the consumers, making the service more affordable for the masses. The industry witnessed a rapid growth of approx. 37%, which was much higher than the marginal growth of approximately 2%, when the industry was in the public sector. In a short span of a couple of years, the revenues of the industry increased from 716 billion rupees to 1053 billion rupees. The number of subscribers increased from 10 million to 392 million in a span of 9 years, reflecting the success and positive impact of the privatization of the telecom industry. Privatization has also encouraged greater investment in the industry, which

may have improved the technology as well as increased the availability of services in rural and remote areas.

However, the growth of subscribers may be because of other reasons, such as cheaper handsets and better technology. The role of the government in boosting domestic demand is vital, as, according to the article, it is using adequate fiscal and promotional tools to complement the growth of the telecom industry. The increase in population, increased economic activity and increased income have also contributed to the phenomenal growth of the telecom sector. Thus, the success of the industry cannot be solely attributed to the privatization of the telecom industry.

Maximum 5 marks for one side of the argument, reserve one mark for a conclusion (Up to 8 marks).